User Manual

IntelliCAP **Products**

Document Version 2.0.1
Supported intelliCAP Version – 2.0.X, 2.1.X

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Legend:
<Button text> is used to indicate a button and is used throughout the text.

Document History

Version	*Date*	*Description*	*Supported intelliCAP Version*
1.4	16/01/2012	- First public version	1.7 – 1.8 – 1.9
1.5	8/5/2012	- Additional information added to “PowerShot” section - Revision due to new SDK support feature	2.0
2.0	15/1/2013	- Revision due new SDK features	2.0 – 2.1

1.0 Introduction

1.1 IntelliCAP

IntelliCAP is the answer to the high end, high speed live photo capture task. By using the standard TWAIN interface we are able to offer this application to any organisation wishing to upgrade their existing photo-ID or Access control application.

IntelliCAP incorporates a highly accurate face detection algorithm. This face detection feature not only detects the presence of a face in the picture, it also measures that face. By using this measurement IntelliCAP automatically crops the photo to the desired height/width ratio.

Although extensive tests have proven our algorithm successful for approximately 96%, IntelliCAP still uses computer vision principles. This means that sometimes no faces, or multiple faces will be detected. To overcome these situations, IntelliCAP has an easy to use manual crop function that is automatically started when needed.

IntelliCAP is an intelligent capturing application for ID Photography based on face detection. IntelliCAP products are designed to perform the following functions:

- Full control of image capturing devices including WDM, Canon SLR, Canon PowerShot, etc.
- Ability to work as TWAIN driver.
- Ability to work as standalone software.
- Camera settings control from computer.
- Live image preview.
- Image rotation: manual by 90 degrees.
- Automatic image capture.
- Automatic face crop on the captured image.
- Image enhancement.
- Image export to the TWAIN compatible software (e.g. to ID card design and management software.
- Save images to the specified folder.
- Customized plugins which allows the user to add special customized features to his IntelliCAP capturing solutions.

IntelliCAP software can work both as standalone software and as TWAIN driver with all TWAIN compatible ID card applications (Asure ID, Badge Maker, CardExchange, Card Five, EPISuite, ID Works, ID Flow and others).

With this innovative way of capturing and optimizing photos from file or digital camera, you will greatly improve your capturing time and production efficiency. Your photo ID cards will have a higher level of quality while the quality level of the input photos can be much lower than before.

In general, IntelliCAP will capture a quality photo in less than a second.

1.2 IntelliCAP Versions

IntelliCAP offers you the functionality of working with the following devices and plugins:

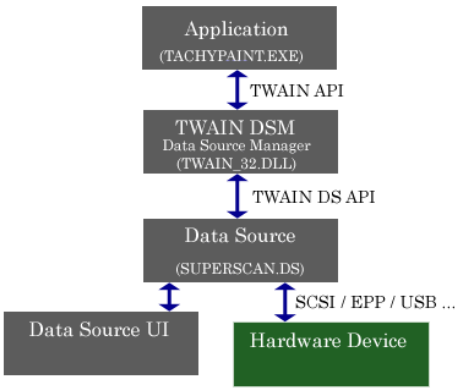
- WDM Devices
- Canon reflex (SLR) camera
- Canon PowerShot camera
- Twain Devices
- Process existing images

1.3 About TWAIN DS

TWAIN is an industry standard software interface used to transfer still images into applications from devices, on Windows and Apple computers. TWAIN is not an acronym, but people insist on trying to make it into one.

The TWAIN standard is published, maintained, promoted and supported by the TWAIN Working Group - see www.twain.org.

TWAIN is not a hardware-level protocol. It requires a driver (mysteriously called a Data Source or *DS*) for each imaging device. When a device is advertised as *TWAIN Compatible* this simply means the device has a TWAIN DS (driver) available for it.



TWAIN Data Source (TWAIN DS) is a high-level device driver to access imaging device from Twain compliant application like Asure ID, Badge Maker, BM Entry, CardCoach, CardExchange, Card Five, CardsOnline, CM500, CM5000 EPISuite, ID Works, ID Flow, IntelliCAP, jFive, nFive, PaintShopPro, PhotoShop and others.

1.4 Accessing the TWAIN DS

- If you work with Adobe PhotoShop go to File / Import / IntelliCAP xxx

- If you work in Jasc Paint Shop Pro go to File / Import / TWAIN / Select Source, and select IntelliCAP xxx. After the source is selected use Acquire command (File / Import / TWAIN /Acquire).

- If you work in other graphic applications supporting TWAIN, please refer to the corresponding documentation supplied with your graphic software.

For more details: “Appendix A: TWAIN DS” for some extra examples of using the IntelliCAP application with applications which support TWAIN DS devices.

1.5 intelliCAP SDK

The intelliCAP SDK allows the developers to communicate and capture images using the intelliCAP application over Remote Procedure Calling (RPC). The SDK works just like a Twain driver wherein the intelliCAP application is invoked and the captured and processed image is transferred back to the host application implementing the intelliCAP SDK.

To use the intelliCAP SDK for communicating with the intelliCAP application the user needs to install intelliCAP application version 2.0 or later. Earlier versions of the intelliCAP application are not supported by the SDK.

Contact your reseller for more information about the intelliCAP SDK!

2.0 Software Package and System Requirements

The following sections specify the software package and the system requirements for the IntelliCAP products.

2.1 Software Package

Software package includes the following:

1. Setup file (setup.exe).
2. Serial number for activating the software.

Note: The user manual is stored on a web server, to open this manual an active internet connection is required. If no internet connection is available, ask your reseller to provide you a hard-copy of it.

2.2 System Requirements

Below you'll find the system requirements to run the various IntelliCAP products on your computer properly. Always install the latest Microsoft updates and service packs.

- Supported Operating Systems:
  - Windows 7.
  - Windows Vista.
  - Windows XP.

  Citrix, Virtual Machines, Windows Emulators are not supported!
- Supported Architectures:
  - x86.
  - x64 (in 32 bit mode)
- Hardware Requirements:
  - Recommended minimum for good performance: Dual Core or higher with 1GB MB RAM or more.
  - Minimum disk space: 100 MB.
  - One free USB 1.0 (or higher) port to connect camera to the PC (if applicable). For some new cameras supporting USB 2.0; we advise the use of a USB 2.0 port. Otherwise the image transfer speeds will be much lower than is allowed by the camera. If the IntelliCAP version is supplied with the USB dongle, your computer shall have the second free USB port.
- Prerequisites:
  - .NET Framework 4.0
- Security:
  - Installation: during the installation, installation privileges are required!
  - License Registration: during the license registration process, admin privileges are required!
  - Operation: IntelliCAP requires read/write privilege for the specified data directory. By default "%PROGRAMDATA%\Documents\IntelliCAP\" directory will be used as the data directory but the user could change this folder during the installation process.
    - Windows XP: "C:\ProgramData\IntelliCAP" → %ProgramData%\IntelliCAP
    - Windows 7: "C:\ProgramData\IntelliCAP" → %ProgramData%\IntelliCAP

2.3 Software License Agreement

This document is a legal agreement between the user (Licensee) and Syx Graphics By installing this product, Licensee is obliged to fulfil the terms of this agreement.

Syx Graphics reserves all rights not specifically granted, and retains title and ownership of the software.
A licensee shall have no rights to duplicate, translate, decompile and/or reverse-engineer this product, nor shall licensee attempt to develop any other products that possesses the 'look and feel' of this product.
As the only warranty under this agreement, and in the absence of accident, abuse or misapplication, Syx Graphics warrants to the original licensee only that the disks on which the software is recorded are free from defects in materials and workmanship under normal use and service for a period of 90 days from the delivery date. Syx Graphics is only obliged to either return the purchase price as indicated or replace the disk that not meets Syx Graphics's limited warranty upon return.

Syx Graphics shall have the sole and exclusive rights, in its discretion, to institute and prosecute lawsuits against third persons for infringements of the rights licensed in this agreement.

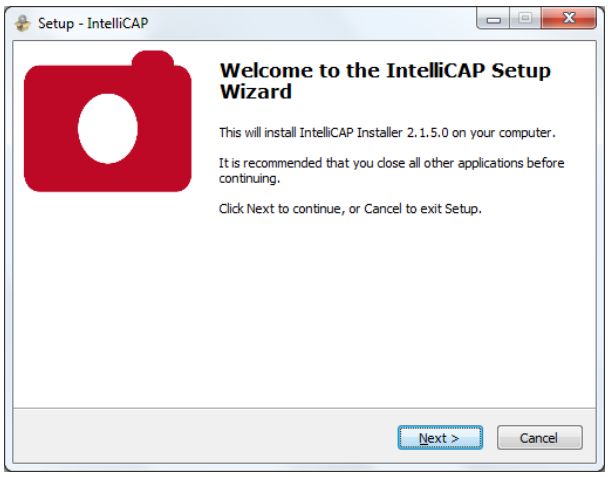
This agreement shall be governed in accordance with the laws of Belgium; all disputes under this agreement shall be resolved by litigation in the courts of Kortrijk (Belgium).

3.0 Installation and Support

3.1 Managing Software Installation

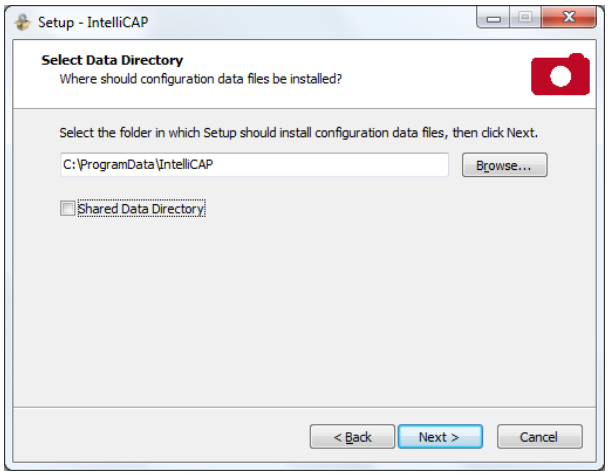
The following are the steps for the installation of an IntelliCAP Application:

1. Run setup.exe.
   Press <Next> to install IntelliCAP Application.

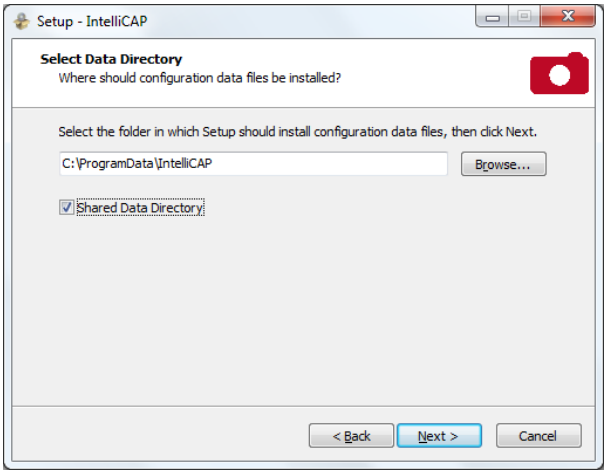

Setup - IntelliCAP
Welcome to the IntelliCAP Setup Wizard
This will install IntelliCAP Installer 2.1.5.0 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

2. Select the Data Directory for installing the configuration and other data files into.
   To select a shared data directory check the “Shared Data Directory” option. If checked, the configuration and data files will be written to the selected data directory, otherwise the files will be written to a folder named <MachineName> inside the selected data directory.

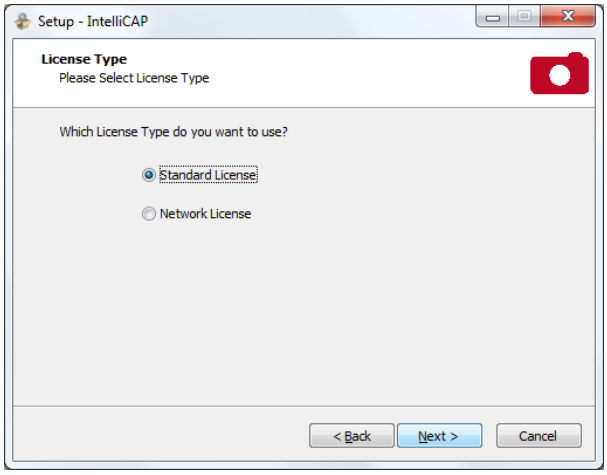
   Private Data Directory:


Setup - IntelliCAP
Select Data Directory
Where should configuration data files be installed?
Select the folder in which Setup should install configuration data files, then click Next.
C:\ProgramData\IntelliCAP
Browse...
Shared Data Directory
< Back
Next >
Cancel

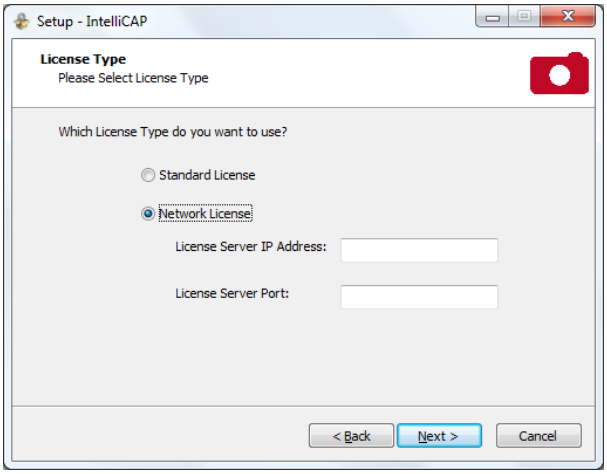
Shared Data Directory:


Setup - IntelliCAP
Select Data Directory
Where should configuration data files be installed?
Select the folder in which Setup should install configuration data files, then click Next.
C:\ProgramData\IntelliCAP
Browse...
Shared Data Directory
< Back
Next >
Cancel

3. Select the License Type. Choose “Standard License” if application needs to be run with stand-alone license. Use “Network License” if you are using floating license at your organization. To install server license service, Separate installation document is available upon request.

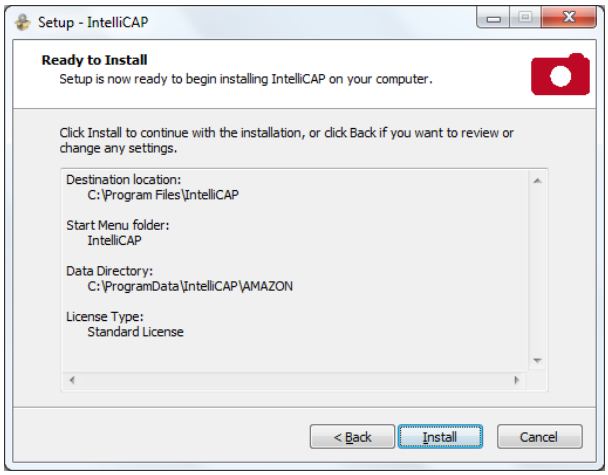


To configure the application on the server, you need to specify the IP address of your server and the Port on which the service runs.

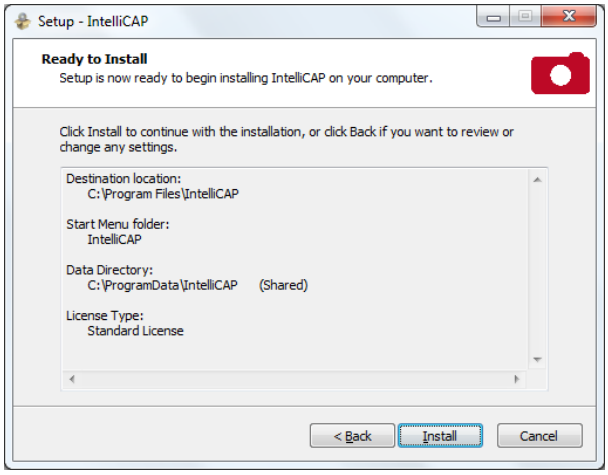


4. The summary of the installation configuration will be displayed before the installation starts. Click <Next> to initiate the installation procedure of IntelliCAP Application.

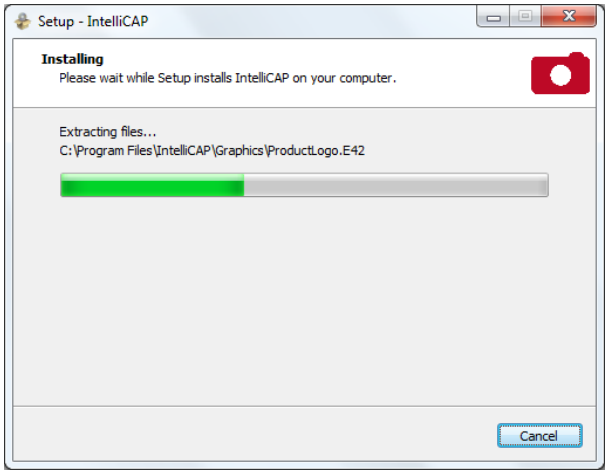
   Private Data Directory:



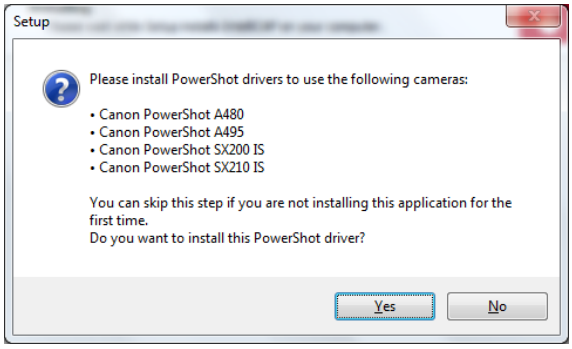
   Shared Data Directory:



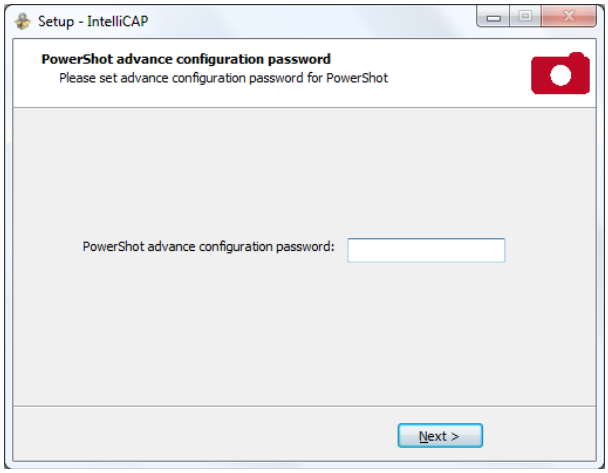
5. The installation process is in progress.



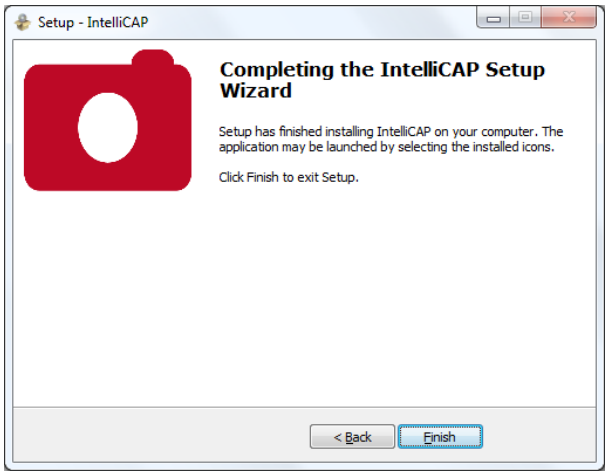
If your IntelliCAP version contains the Canon Powershot Plugin, the Canon PowerShot Drivers will be installed during this step. See the "APPENDIX E: PowerShot – Additional Installation steps for Canon PowerShot A480 / A495 / SX200 and SX210" for more information.


Setup
Please install PowerShot drivers to use the following cameras:
• Canon PowerShot A480
• Canon PowerShot A495
• Canon PowerShot SX200 IS
• Canon PowerShot SX210 IS
You can skip this step if you are not installing this application for the first time.
Do you want to install this PowerShot driver?
Yes
No

Set the advanced configuration password for Canon PowerShot devices:


Setup - IntelliCAP
PowerShot advance configuration password
Please set advance configuration password for PowerShot
PowerShot advance configuration password:
Next >

6. The installation process has been successfully completed.
   Click <Finish> to exit the Setup


Setup - IntelliCAP
Completing the IntelliCAP Setup Wizard
Setup has finished installing IntelliCAP on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
< Back
Finish

Note - Camera Configuration Wizard (!! Only for PowerShot devices !!)

Before you can use your Canon PowerShot device with the IntelliCAP application you need to run the ***PowerShot Camera Configuration Wizard***. You can find the configuration wizard in Start → All Programs → IntelliCAP → Camera Configuration Wizard.

Look at "PowerShot Configuration Wizard" section , further in this document, for detailed information!

3.2 Managing License Registration

Registering IntelliCAP product can be achieved in two ways:

i) Online activation: with internet connection.
ii) Offline activation: without internet connection.

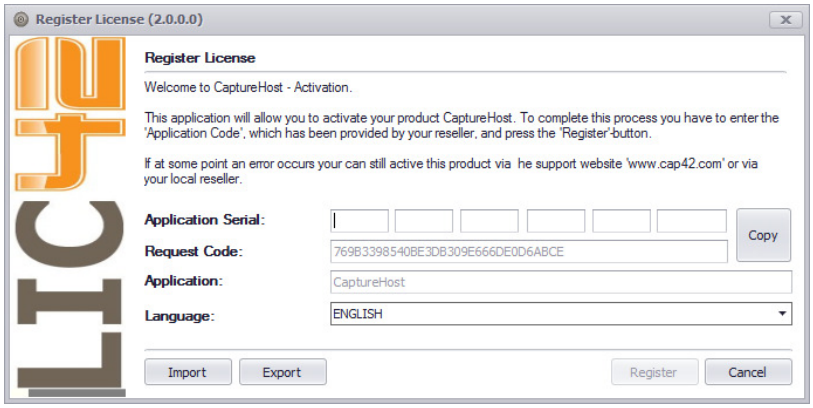
Note: if the installed IntelliCAP application is not licensed, all features will be available but DEMO watermark will be added to the result image.

For special projects it is possible to use a USB hardware dongle as well. Contact your reseller if you are in need of this solution.

3.2.1 License Registration with Internet Connection

The steps below will help you to register the IntelliCAP product:

1. Go to 'Start' and select 'All Programs'.
2. Select the IntelliCAP application.
3. Select Register.
4. Now enter the Application Serial code that is provided with the Software Package.

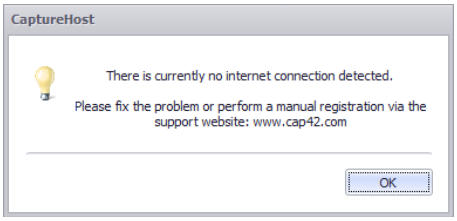

Register License (2.0.0.0)
Register License
Welcome to CaptureHost - Activation.
This application will allow you to activate your product CaptureHost. To complete this process you have to enter the 'Application Code', which has been provided by your reseller, and press the 'Register'-button.
If at some point an error occurs your can still active this product via he support website 'www.cap42.com' or via your local reseller.
Application Serial:
Copy
Request Code:
769B3398540BE3DB309E666DE0D6ABCE
Application:
CaptureHost
Language:
ENGLISH
Import
Export
Register
Cancel

5. Press the Register button.
6. "Congratulations! Your license has been activated successfully" message box.
   Note: if you do not get this message box, something went wrong during the registration. Further in this manual the different error scenarios are discussed.

Note: By pressing <Copy> on the register form, the "Application Serial" and the "Request Code" will be copied to the Clipboard. The user can use this functionality to paste these values in a document or an e-mail for further use.

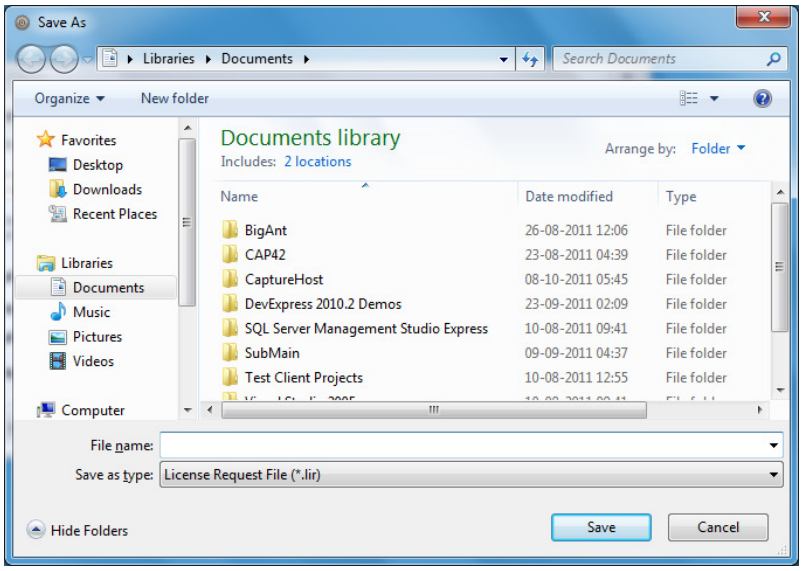
3.2.2 License Registration without Internet Connection

If the registration tool does not detect any active internet connection during startup, the following popup is displayed:

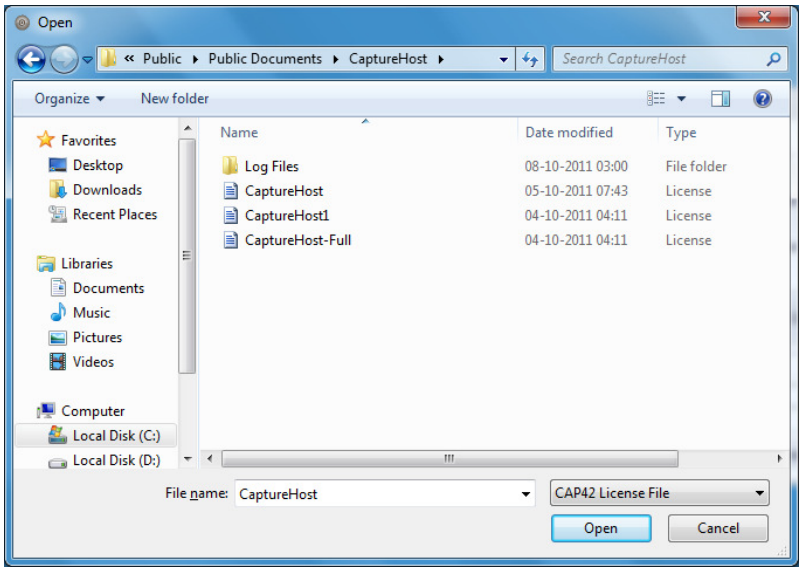

CaptureHost
There is currently no internet connection detected.
Please fix the problem or perform a manual registration via the support website: www.cap42.com
OK

If no internet connection is detected, the user can manually get the IntelliCAP product's software license. The user needs to follow the steps listed below to get the license:

1. Enter the “Application Serial” and the “Request Code” and accordingly press on the <Export> button. By pressing this button a LIR file, known as the License Request file, will be generated. This file should be send to your reseller.



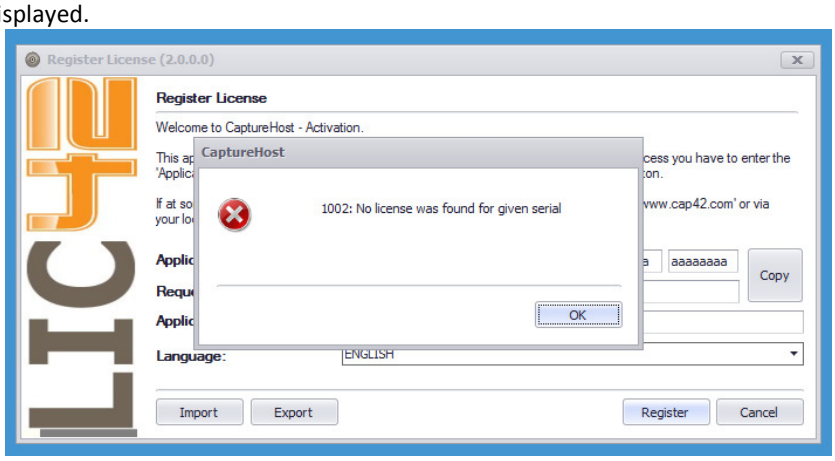
2. Your reseller will process the LIR-file and provide you a LIC-file.
3. To register your IntelliCAP product, you have to press the <Import> button and select the LIC-file.



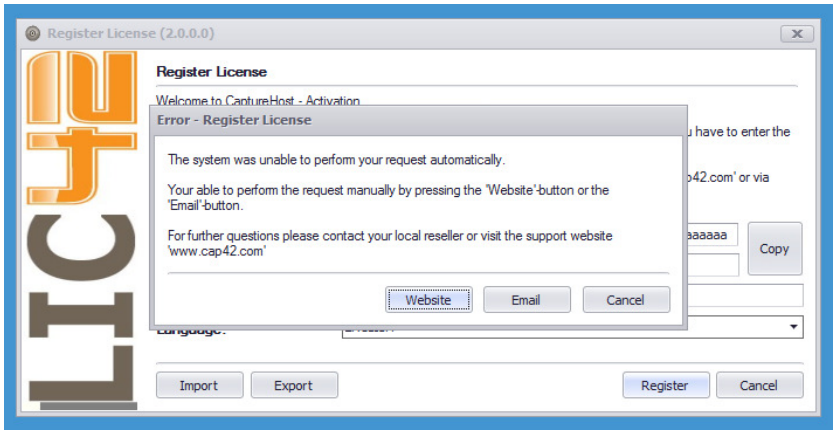
4. If the reseller generated a valid license, you’ll get the “Congratulations! Your license has been activated successfully” message box.
   Note: if you do not get this message box, something went wrong during the registration. Further in this manual the different error scenarios are discussed.

3.2.3 Invalid Application Serial

While registering an IntelliCAP application, if an invalid application serial is entered, the following error message will be displayed.

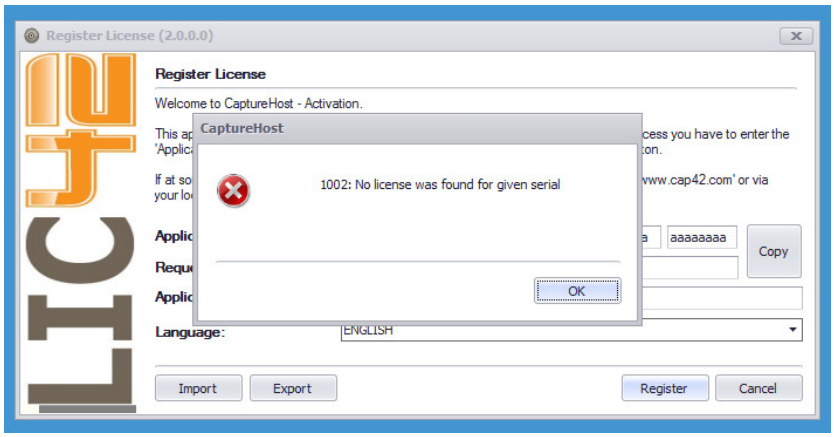


When pressing <Ok>, the user will be redirected to the following instructional message.



3.2.4 License already in use

If the license is already in use or the number of maximum registrations has been achieved, the register tool will display a message box shown below, after pressing the <Register> button.

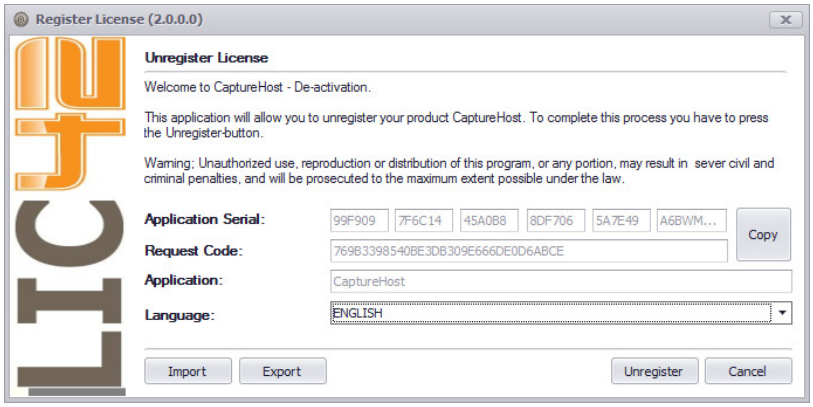


The user should contact his reseller in order to fix this problem or to get more information regarding this problem.

Note: if you are using a single-machine-license, an Application Serial can only be used once. If you are using a multiple-machine-license, an Application Serial can be used on several machines.

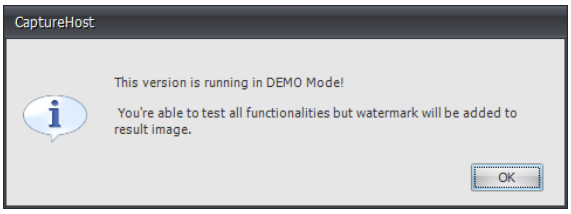
3.3 License Unregistration

If you're uninstalling IntelliCAP and valid internet connection is available, your license will be de-activated automatically in the License Database.

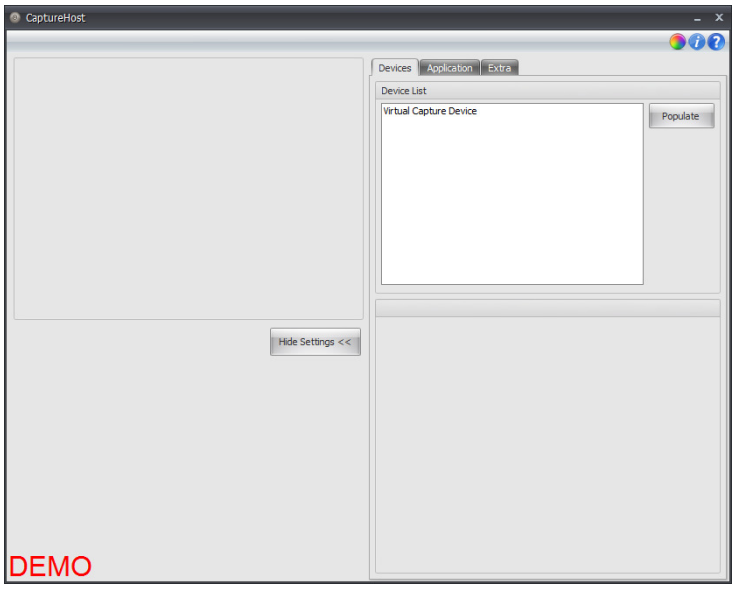


3.4 DEMO mode

When the IntelliCAP application is started without getting its license registered first, the application will work in the DEMO mode.


CaptureHost
This version is running in DEMO Mode!
You're able to test all functionalities but watermark will be added to result image.
OK

The user can discover all the features while using the DEMO mode. The only difference is that the application screen shows 'DEMO' text in the bottom left side corner and the result image will get a 'DEMO' watermark.



3.5 Managing Support and License Management Website

The support and license management website http://www.intellilicense.com/ has been built to provide support to queries regarding the IntelliCAP products. Managing IntelliCAP licenses is also made easy through this site.

Through the Intellilicense facility, the user can:

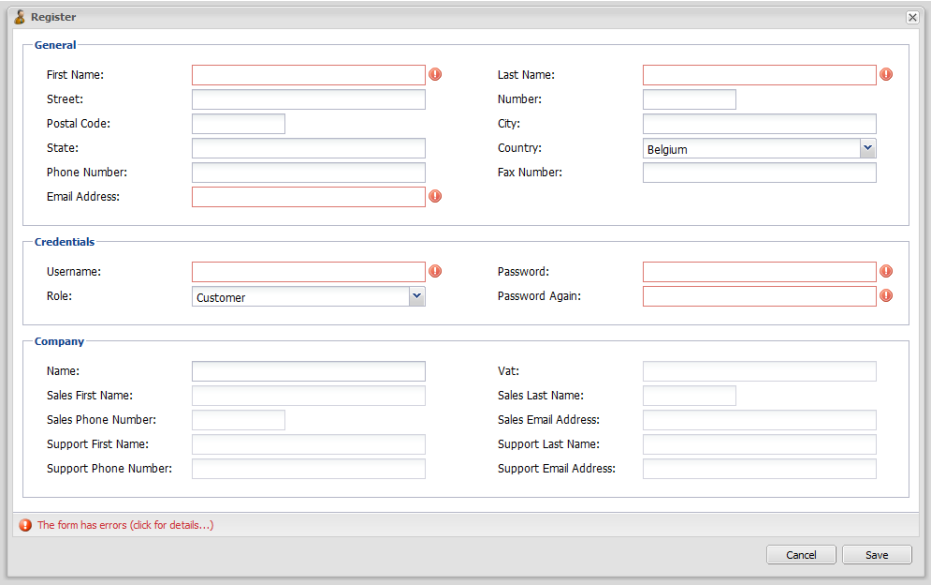
- Can register/unregister licenses and retrieve an overview of the registered clients.
- Can download latest as well as older releases (as per your license is validated)
- Can create/manage Tickets to get support from the IntelliCAP support team
- Can get his licensed registered via the website in case when the registration of IntelliCAP does not work properly due to network security reasons.

3.5.1 Account - Login

Before you're able to access the website, you need a user-account.

1. Go to www.intellilicense.com.

2. Create an account if you don't have an account yet.
   a. Press the Register button.
   b. Complete the register form.
   c. Press the Save button.



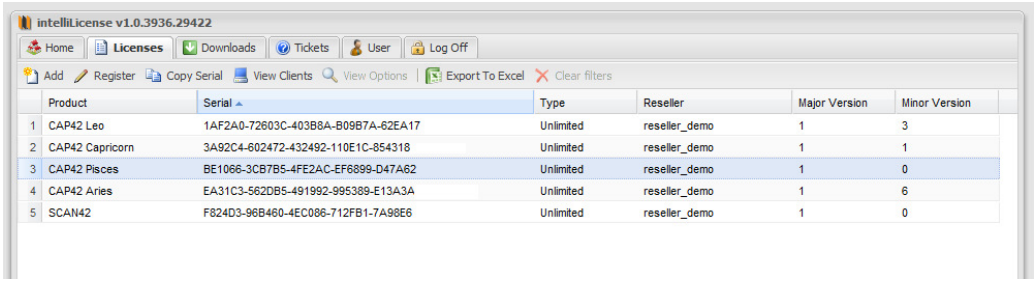
   d. Activate your account by clicking on the URL which is available in the e-mail sent to your e-mail account.

3. Login with your account.

3.5.2 Licenses

Go to the 'license' tab page.
The License form has the following functionalities:

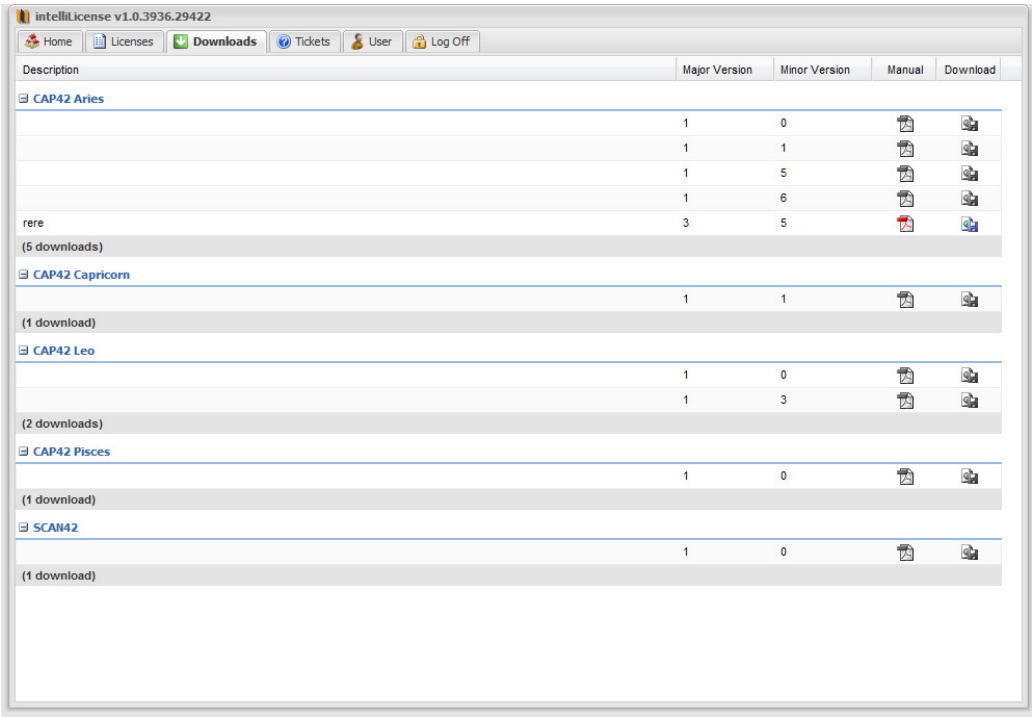
- *Add:* Use this functionality if you want to link a new Application Serial to your account. After completing the wizard, the application serial will be displayed in the general license overview.
- *Register:* To register a license, in case when the registration of IntelliCAP via the desktop application does not work properly due to network security reasons. You have to select a license and press the Register button.
- *Copy Serial:* Copy the selected serial to your machine's clipboard.
- *View Clients:* You can see which clients (machines) are using a license, by selecting a license and then click on <View Clients>.
- *Export to Excel:* Export the license overview to a CSV file.



3.5.3 Downloads

Go to the 'Downloads' tab page.

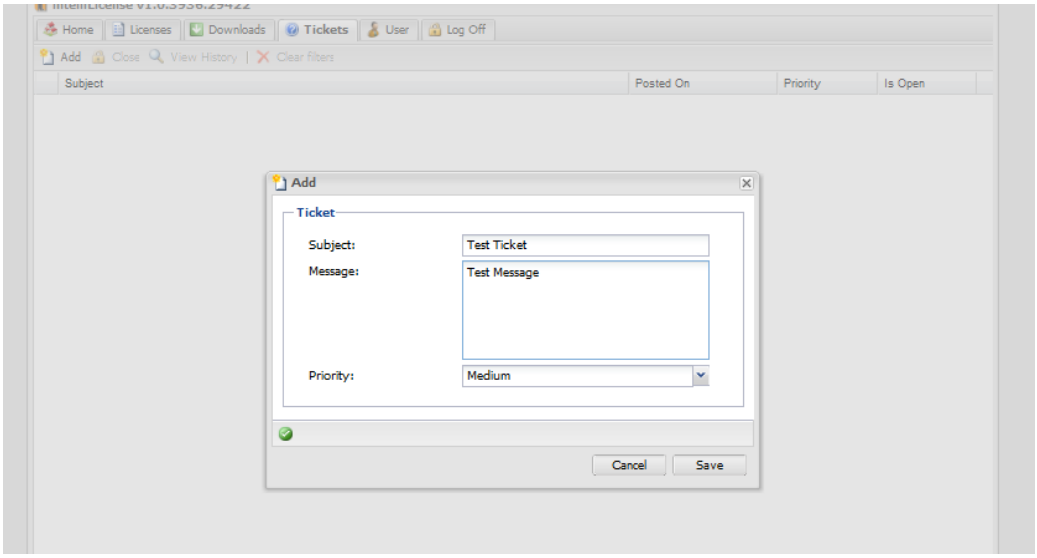
This section allows you to download the most recent IntelliCAP software! Only the IntelliCAP products of which you already purchased a license are downloadable. Contact your reseller if you want a demo version of the IntelliCAP products which are not listed in the overview form.



3.5.4 Tickets

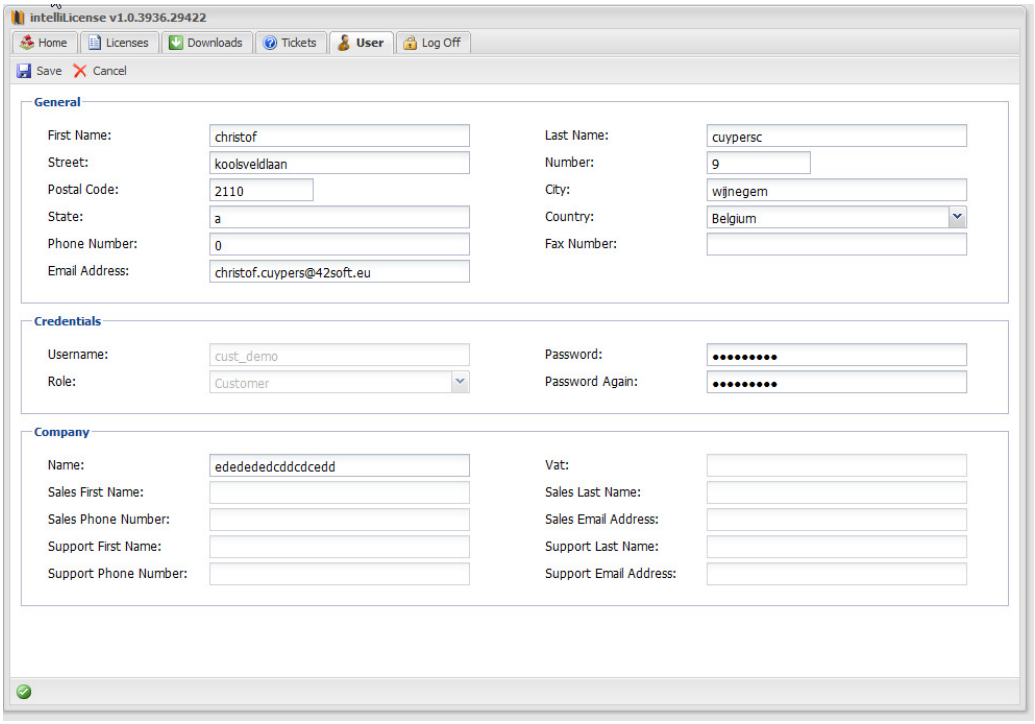
Go to the 'Tickets' tab page.

In this section, you can manage your support tickets. Each time a new ticket is created or the status of a ticket is changed, you will get automatically an update e-mail to keep track of your ticket(s).



3.5.5 Account

Go to the 'User' tab page.
In this section, you can view and update your profile settings.



4.0 Mode of Operation

Successful installation lets you run IntelliCAP Products in the following operating modes:

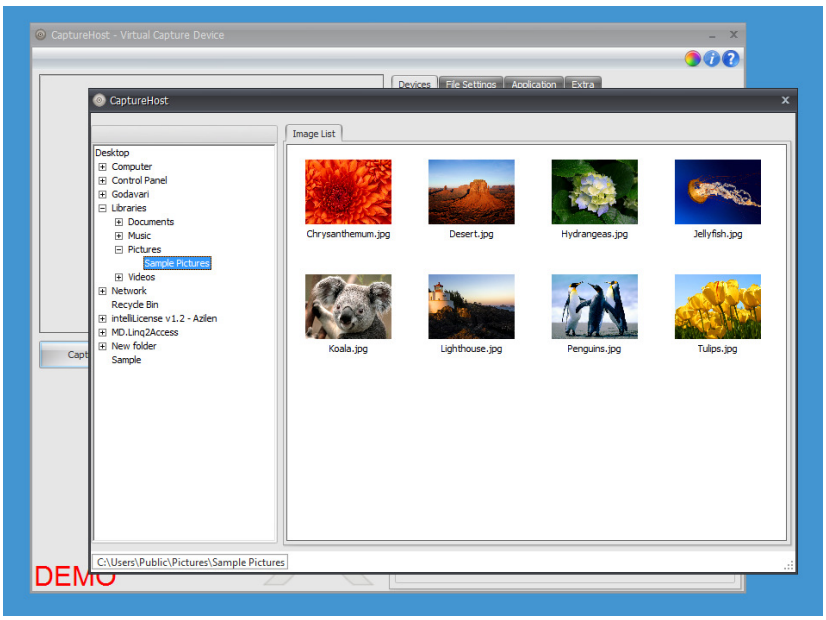
1. The Normal mode
2. The TWAIN mode

4.1 The Normal mode

In this mode, the IntelliCAP product runs as an independent stand-alone application that can be operated directly. Operating in the normal mode lets the user save the captured image on the local hard drive. The following steps will help you to run IntelliCAP product in the normal mode:

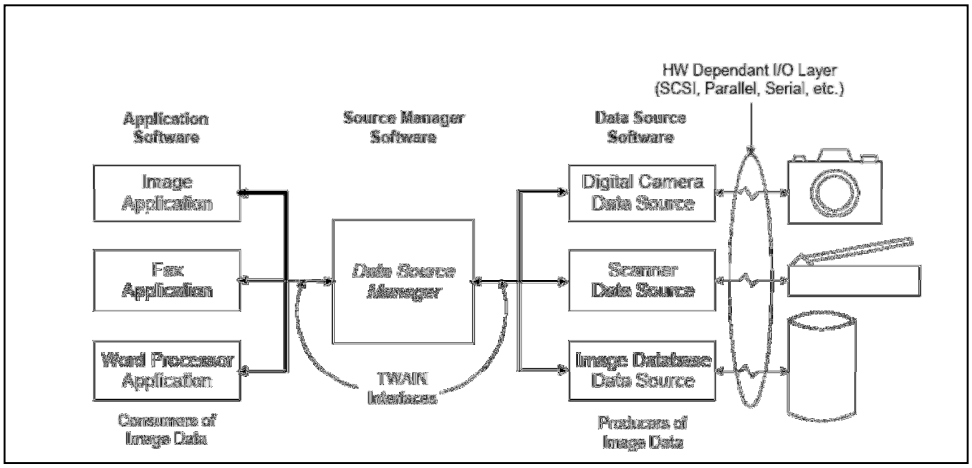
1. Click on the Windows Start button.
2. Go to All Programs.
3. Select the IntelliCAP product.
4. Press the Capture button.
5. Save Dialog will be displayed to save the captured image.

! Note – It might happen that your license does NOT allow you to run intelliCAP as a standalone application (the normal mode).



4.2 The TWAIN mode

In this mode, IntelliCAP runs as a TWAIN source from all the TWAIN compatible applications. As soon as the user finishes the capturing, the result image gets transferred to the TWAIN application.


HW Dependant I/O Layer
(SCSI, Parallel, Serial, etc.)
Application Software
Source Manager Software
Data Source Software
Image Application
Fax Application
Word Processor Application
Data Source Manager
TWAIN Interfaces
Digital Camera Data Source
Scanner Data Source
Image Database Data Source
Consumers of Image Data
Producers of Image Data

5.0 Final Check out before initiating the operations

Please confirm the following steps before you start working with IntelliCAP product:

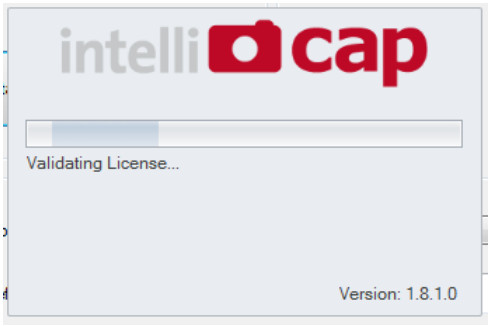
1. Your capturing device is installed properly.
2. IntelliCAP Product software is installed on the PC.
3. The capturing device is turned on and connected with the USB cable to your PC

IntelliCAP Canon SLR Attention!

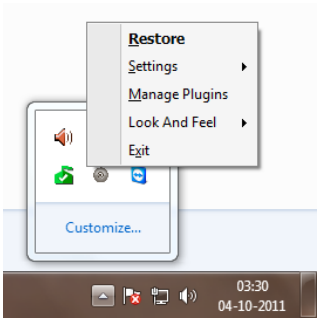
- Not all Canon SLR cameras provide an ability to have live image preview in the software window.
- Canon SLR cameras having live image preview ability shall be set in “Auto” (P), “Exposition priority” (TV), “Aperture priority” (Av), or “Manual” (M) mode. The live image preview will not be displayed in the software window if Canon SLR camera is set in “Full Auto” mode or any of the special modes.
- The live image should be sharp, dark, with natural colors, etc. In order to get proper image in the preview window and start capturing photos please read the IntelliCAP Canon SLR section.

5.1 Initiating operations with IntelliCAP application

The first time when the IntelliCAP application starts, the loading time might be considerably high because the license is checked and the connected cameras are configured. Once IntelliCAP is started, the application will continue running in the background of your system. So, the next time the IntelliCAP application is called, it will take less than a second to load.



If IntelliCAP is running in the background, the icon will be displayed in the system tray. By double-clicking on this icon, the IntelliCAP window will be displayed.



Attention! The live image can be blurry, dark, devoid of natural colors, etc. In order to get proper image in the preview window and start capturing photos please read the next Chapter.

6.0 IntelliCAP Application

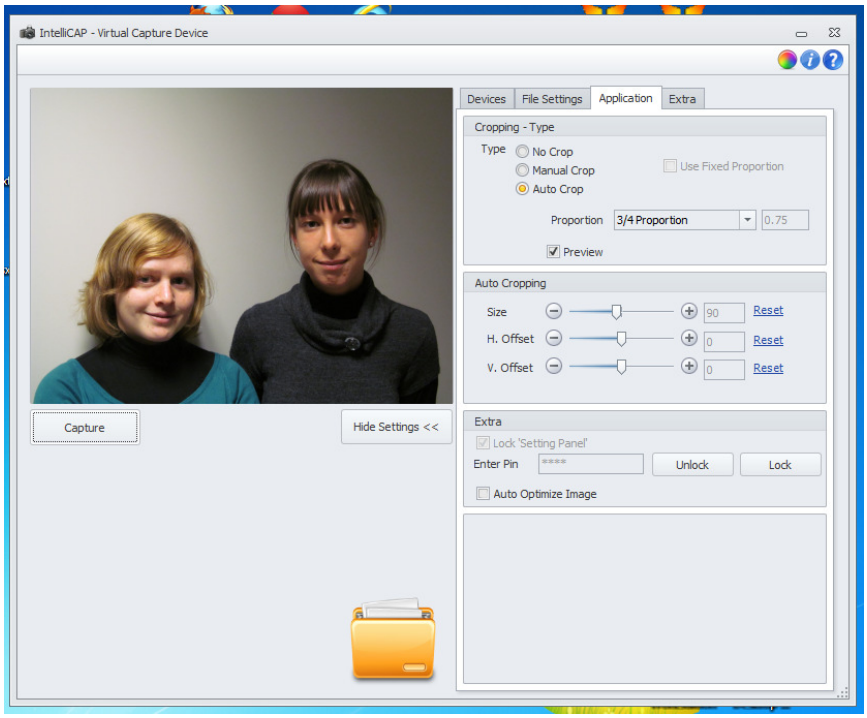
6.1 Introduction

All the IntelliCAP plugins (WDM Camera, Canon SLR Camera, Canon PowerShot Camera, and Virtual Capture Device) are based on the same framework and therefore have the same workflow. If a user is familiar with any of these IntelliCAP plugins, it won't be difficult for him to switch to using other IntelliCAP plugins. Our mission is to keep it user friendly, secure and fast.

In the next section, we shall discuss the different features of the IntelliCAP Application.

6.2 IntelliCAP – Host application

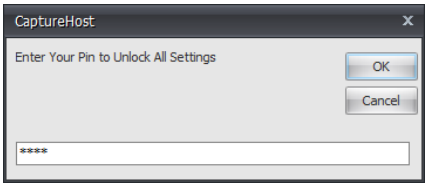
IntelliCAP lets you capture images and process them according to your requirements with the help of various features offered in the control panel.



The program window of IntelliCAP is divided into two parts:

1. *The (Live View) window on the left side*: The Live View area depicts the image of the object to be captured. Any changes in the camera setting that are desired by you for the image to be captured, done before the capturing, gets reflected in the Live View window. This window has two buttons:
    a. Capture: By pressing this button, the image of the object viewed in the Live View area will be captured and processed.
    Tip: if you press on the button with a right mouse click, the manual cropping workflow will be called.

    b. Settings: This is a toggle button. When you press the <Show Settings> button, it asks for a PIN to unlock all the settings. Upon entering the correct PIN, the various settings are displayed and the button will change to <Hide Settings>. If you want to hide the control panel showing the settings, press <Hide Settings>button.



2. *The Control Panel on the right side:* Following 3 basic application control tabs and 1 or 2 (specific to the selected IntelliCAP plugin) device specific tabs are available on the Control Panel:
    a. ***Devices:*** Here all the available IntelliCAP plugins are listed. On selecting any of the available device plugins you can activate that device and configure it to your liking. By default no plugins are selected.

    b. ***File Settings:*** This tab page will be loaded only when you select the Virtual Capture Device plugin from the device list. This tab page contains version specific settings to manage the acquisition device (camera or Windows Image File)

    c. ***Camera:*** This tab page will be loaded when any of the camera device plugins (WDM, Canon SLR, and Canon PowerShot) is selected. Here you can customize the image settings for the connected device and its image acquisition.

    d. ***Flash:*** This tab page is exclusively specific to the Canon PowerShot device plugin. You can manage the flash settings of your connected Canon PowerShot device here.

    e. ***Application:*** This tab page contains configurable software parameters (face detecting, cropping, offset, …)

    f. ***Extra:*** This tab page contains some extra application settings (plugin, language, …)

Attention! The default pin code = 1234 or 1A2B

6.2.1 Devices Tab

Here you can find a list of all the devices connected to the machine. By default no device is selected. On selecting one of the devices from the list, its respective plugin is activated and its plugin specific tab pages are added.

6.2.2 Populate Devices

When a device is connected to machine while the IntelliCAP application is running, the user can click the <Populate> button to get all the plugin specific information and settings of the connected device.

6.3 Camera Info

On selecting a camera of the EOS device plugin type (Canon SLR camera), the camera specific information will be displayed on the tab page below the list of connected devices. The camera information will display the following:

i) Product Name: The name of the Canon SLR camera
ii) Body ID: The unique identification number of the Canon SLR camera body
iii) Battery Quality: The quality of the battery being used inside the Canon SLR camera
iv) Battery Level: The battery level is an indicator of the power left inside the battery

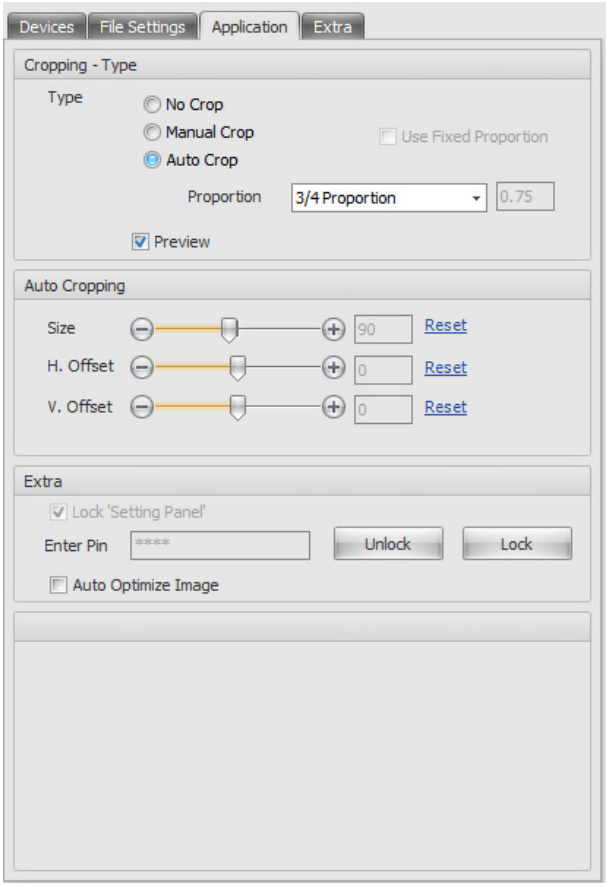
6.3.1 Camera Tab

This tab page lets you adjust the acquisition settings.

Because this tab page is different for each IntelliCAP version, you'll find more information about this tab page in each IntelliCAP device plugin specific section further in this document.

6.4 Application Tab

In the Application tab, relevant software settings can be adjusted. Obviously the default setting is to crop automatically using the face detection algorithm, but it is possible to override this mechanism.



The proportion list lets the operator choose out of one of the predefined height/width ratios, or define a custom ratio.

Since the face detection algorithm will always try to center the nose on the diagonals, it could happen that the total image from the camera is not wide enough, or in other words, that the detected face is too close to a border of the image to crop without hitting the boundaries.

To overcome these circumstances, some complex mechanisms where implemented into the software to automatically 'shift' the face in the resulted selection and add pixels to the image in the areas where space needs to be created.

By selecting the 'Preview' option, the software shows the result to the operator before passing it to the photo-ID software or saving on disk.

6.4.1 Cropping Type

The default setting is to crop automatically (auto crop) using the face detection algorithm, but it is possible to override this mechanism by selecting the No Crop or Manual Crop option.

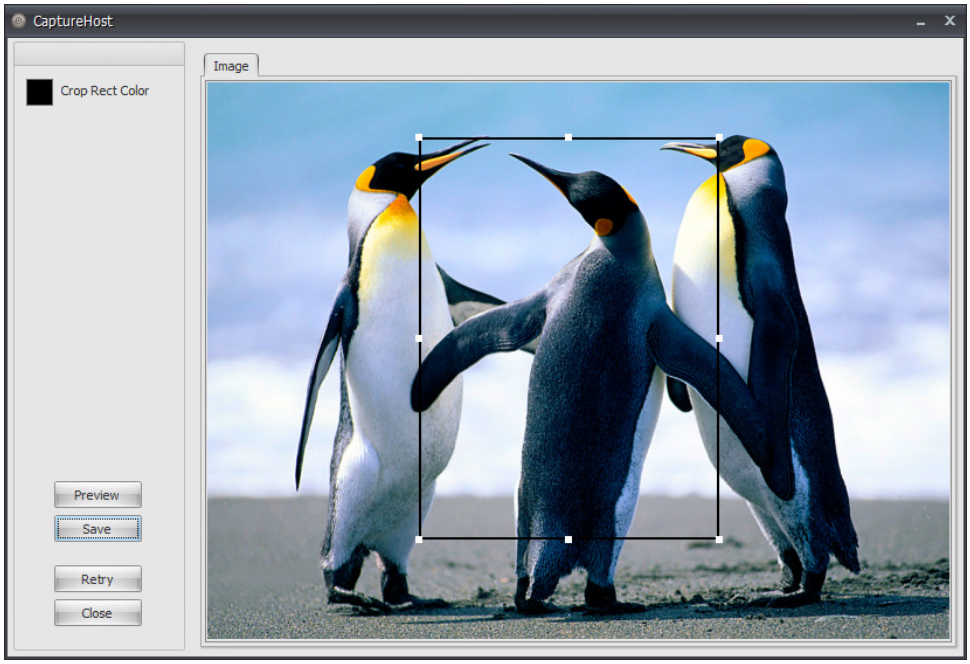
No Crop

The 'No Crop' feature does not offer the user the cropping function. When using this option, the captured image is directly saved/ transferred to the desired location. If the Preview option is selected, a preview of the captured image is displayed before actually saving/transferring the image to its desired location.

Manual Crop

The 'Manual Crop' feature allows the user to manually crop the captured image. After the image is captured, the manual cropping form will be displayed. The user needs to select the region of interest, press the Save button and accordingly the final image will be saved/transferred to the desired location.

When the 'Use Fixed Proportion' is selected, the cropping rectangle in the manual cropping form appears in a fixed proportion. The cropping rectangle can be resized but the fixed proportion will be maintained.



Click and drag the cropping rectangle over the image until you are happy with the layout, click Save to finalize. If you are not pleased with the captured image, you can acquire a new image from the connected camera by pressing the Retry button.

Tip:

- If you press the Capture button with a right mouse-click, the manual cropping workflow will be called if Automatic cropping is selected.
- You can increase / decrease the size of the manual cropping rectangle easily via the mouse scroll.

Auto Cropping

Captured images can be cropped automatically using the face detection algorithm. Single and multiple faces can be detected and cropped with the help of this algorithm.

The face detection algorithm developed in the IntelliCAP is very robust and fast. The actual face detection and measurement is done in only a few milliseconds. After batch testing more than 50,000 real life images in a service

bureau environment, we can say that the fine-tuned algorithm has a success rate of 96%. It is important to realize that IntelliCAP, is a clever way to let the computer guess which combination of pixels could be a face.

Since the face detection algorithm will always try to center the nose on the diagonals, it could happen that the total image from the camera is not wide enough, or in other words, the detected face is too close to the border of the image to crop without hitting the boundaries. To overcome these obstacles, some intelligent mechanisms are designed into the software to automatically shift the face to the required position and add pixels to the image in the areas where extra space must be created.

Working with Auto Cropping

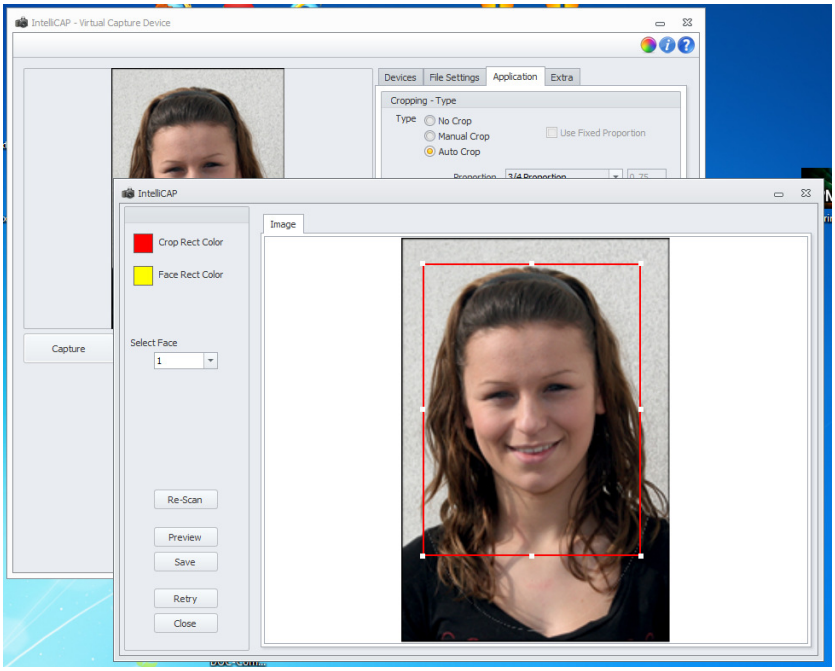
If auto cropping is enabled and 'preview' is disabled, the captured image will be returned instantly to the main application after pressing the Capture button. On the other hand, if no faces or multiple faces are detected or if the 'preview' option is enabled, the manual cropping form will be displayed after pressing the Capture button.

The following steps will guide you to work with the auto cropping feature:

1. Select the Auto Cropping option in the Cropping Type.
2. Select the desired height/width ratio from the 'proportion' drop down list.
3. Enable the Preview option.
4. Press the Capture button (capture image).
5. The cropping rectangle will appear automatically around the boundaries of each detected face. If no face was detected, the cropping rectangle will be displayed in the center of the image.
6. Adjust the size of the control according to your requirement.
7. Save the image.

Note:

- In case Auto cropping is enabled and no face was detected in the capture image or multiple faces were detected, the manual cropping window will be opened automatically. This offers the user the possibility to select and crop in the same way as he would do with other, less sophisticated, camera systems.

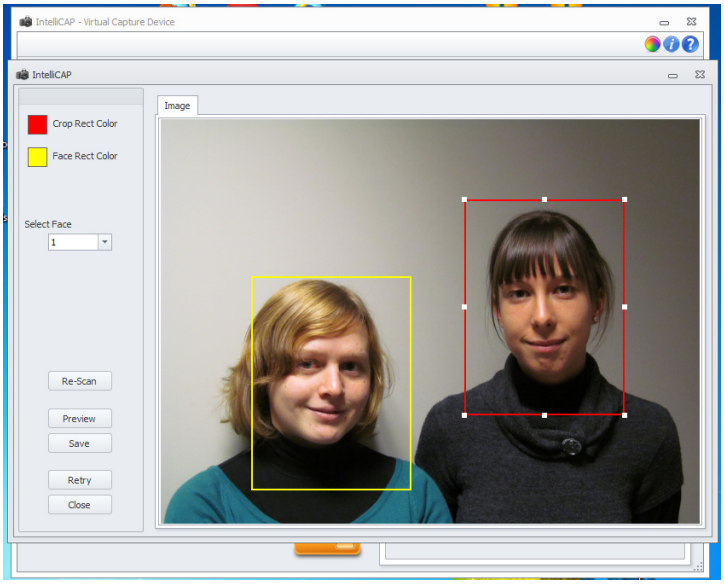


The manual cropping form has got the following controls:

- *Crop Rect Color*: The Crop Rect Color (=Cropping Rectangle Color) allows you to change the border color of the selected rectangle. The default color is white.
- *Face Rect Color*: The Face Rect Color (=Face rectangle Color) allows you to change the border color of the inactive rectangle(s).The default color for Face Rect Color is Green.
- *Select Face*: A drop down list showing the number of detected faces which helps the user to select a cropping rectangle. The control toggles to that face whose number is selected from the list.
- *Re-Scan:* By pressing this button, the cropping rectangles are set back to its original location and size.
- *Preview:* To view the final result; which is based on the selected cropping rectangle.
- *Save:* To save/transfer the captured image to the desired location.
- *Retry:* This option lets you re-capture the image.
- *Close:* To quit the image window, use the Close option.

Multiple Face Handling

The IntelliCAP face detection is capable of detecting and measuring multiple faces into one image. Within the photo-ID requirements it is obvious that multiple faces cannot be handled simultaneously. In the event that multiple faces are in one image, a selection need to be made.



By either using the Select Face dropdown box, or simply by clicking the selected face, the operator can select, crop and enhance the cropping rectangle as needed. Once selected click on <Save> to upload your image.

Tip: If you double-click on a selected face (cropping rectangle), the selected face will be saved at once. By this you don't have to press the Save button anymore

6.4.2 Auto Cropping

Photo composition can be easily configured using the features available in the Auto Cropping section. Various parameters related to auto cropping, whose settings can be configured earlier for the image to be captured are available in this section. The user can change the settings for Size, H Offset and V Offset parameters, for the crop rectangle appearing for the captured, image according to the requirements.

Managing Size

With the Size parameter, the size of the image in relation to the face can be determined. The size of the crop rectangle appearing in the cropping form, alters as the changes in the Size settings change.
The default value for this parameter is 90. <Reset> is used to set the altered value of the parameter to its default.

Sample

Size = 90

Size = 70

Managing H Offset and V Offset

The H Offset and V Offset parameters are used to alter and adjust the position of the nose in the image composition both horizontally and vertically.
The default value for both the parameters is 0.
<Reset> is used to set the control's altered value to its default.

6.4.3 Managing Extra

Features related to the settings panel and image optimization are available in the Extra section.

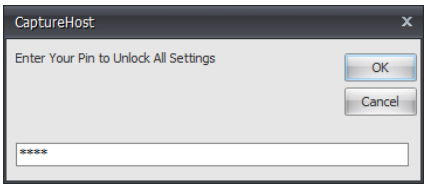
Managing Lock 'Setting Panel'

Once IntelliCAP is configured properly according to your requirements, the settings can be locked so that they cannot be altered by a user. For locking the settings panel, follow next procedure:

1. Enter a pin value to lock the settings for the panel.
2. Press the Lock button. The option Lock 'Setting Panel' will get selected.

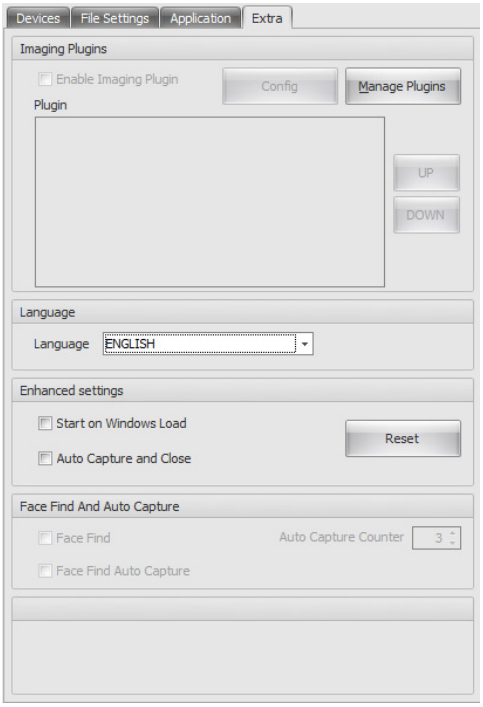
To unlock the settings for the panel, the steps below will guide:

1. Press <Unlock>.
2. Enter the pin value to unlock the settings panel. The panel will unlock and will be available for further alterations.



6.5 Extra Tab

The facility of different imaging plugins as well as language selection is available in the Extra tab.
Certain varied features are also available in the Enhanced Settings.



6.5.1 Imaging Plugins

The IntelliCAP Application comes with a plugin system which allows the customer to add customized / specific / additional functions to IntelliCAP without paying a high development price and without the need to reinstall IntelliCAP. Once a plugin has been developed, the plugin DLL and related files must be copied to the IntelliCAP installation folder and you will be able to use this plugin next time you start the IntelliCAP application.

An IntelliCAP Plugin can be used / built for:

- Automatic saving the captured images in the HR / CRM / SAP Database.
- Automatic sending the captured images to the Card Service Bureau.
- Automatic adding the company's logo to the captured images.
- Automatic adding security features to the captured images.
- Implementing ICAO checking parameters.

If the Imaging Plugin's option is enabled and one or more plug-in functions are selected, these functions will be called before saving/transferring the result image to its final destination.

Note:

- The IP General and IP MaskCropping plugins are installed during the installation of IntelliCAP and available for use. See "Appendix B: IP General Plugin" for a functional description of this plug-in.

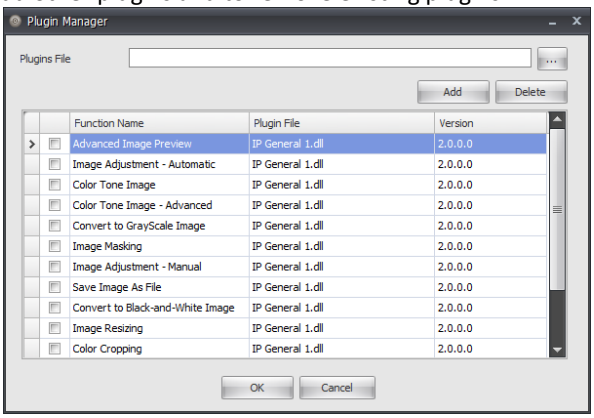
- The IntelliCAP Plugin SDK (including some samples) is available on the IntelliCAP website. This information will allow other software development companies to create IntelliCAP Plugins as well.

Managing Plugins

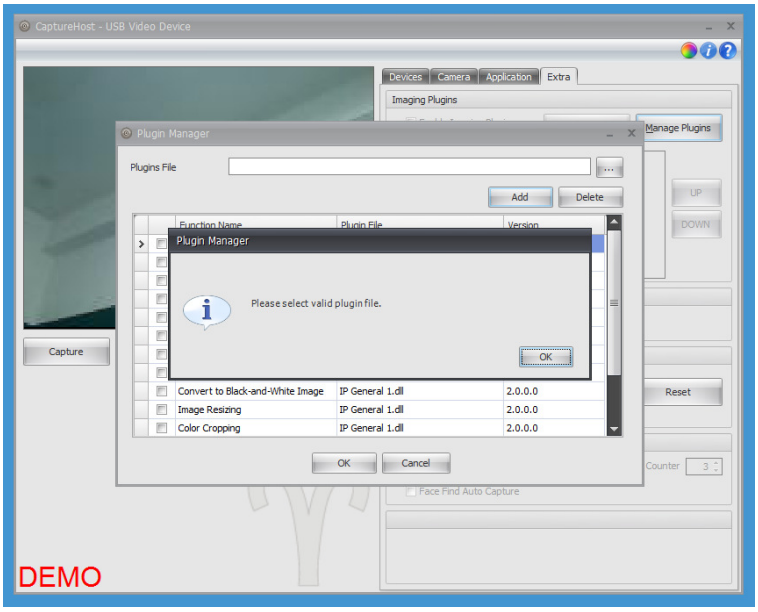
- With the Manage Plugin option the user can select the desired plugins from the available list which are displayed in the Plugin tabular box. These plugins are then available to the user for further processing.

The user needs to follow the steps listed below in order to manage the plugins:

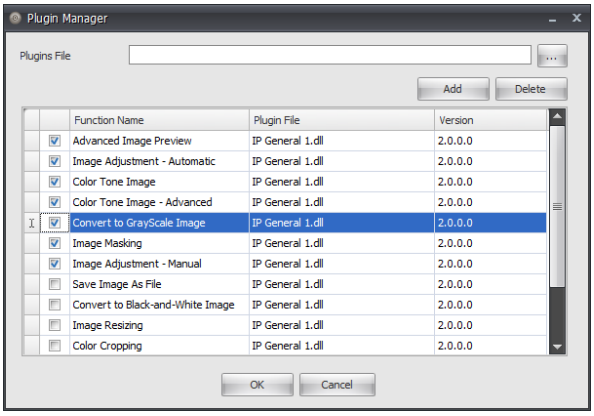
- Go to Extra. Select the Manage Plugins option.
- The Plugin Manager window will appear. This form will display all the selected plugins and provides the ability to add other plugins and to remove existing plugins



- By pressing the Add button, a browser form will be displayed to select another plugin.
- Select the plugin file (for example IntelliCAP_Plugin_Arias.dll).
- If the user selects an invalid plugin, the following message will be displayed to the user.



- After selecting a valid plug-in file, all the available plugins will be displayed as a list in the Plugin Manager. The list shows the function name along with the plugin file name and its version.



- Press the Delete button in order to remove the plugin from the list in the Plugin Manager.
- Select the required plugins from the list. These plugins will act as the active plugins.
- Now press the Ok button.

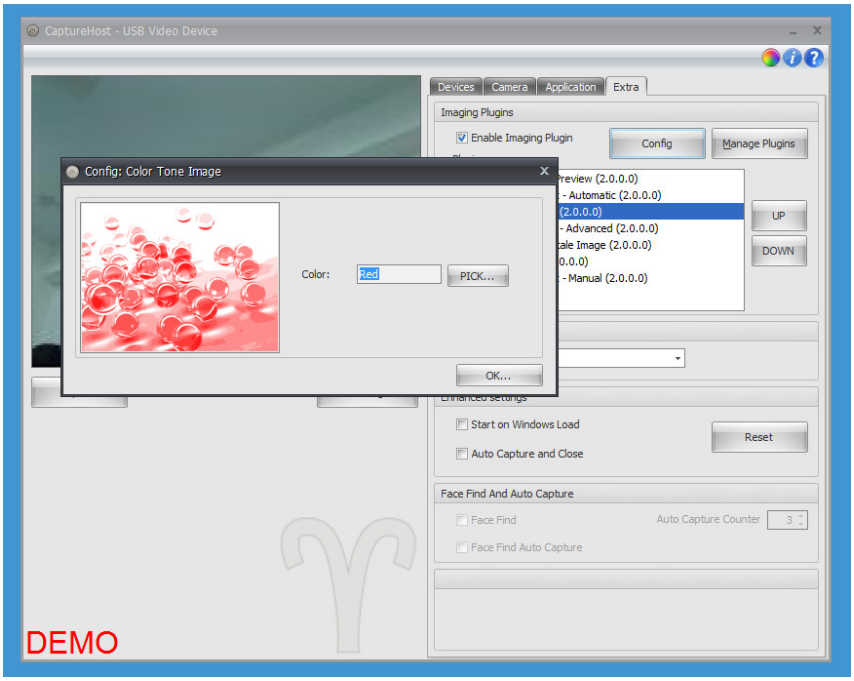
The selected plugins will be displayed in the Plugin tabular box.

The Manage Plugins option will also be available for selection in the notification area that is showing the current running application.

- When the 'Finishing Plugins' option is enabled, it lets the user select the different plug-in functions from the tabular list of plugin's.

- The up and the down arrow keys get activated only after selecting a plug-in function. These arrow keys are used to move the selected plugin function upwards and/or downwards in the finishing plugin table list.
  If multiple plug-in functions are selected (checkbox checked), they will be executed according to the order in the finishing plugin table. The up and down arrow keys allow you to alter this order of execution.

- If a plugin function requires additional configuring, the Config button will be enabled after selecting the plug-in function. By pressing this button, the configuration form of the selected plug-in function will be displayed.



6.5.2 Managing Language

Via this control the user will be able to select his appropriate language and accordingly the IntelliCAP interface will be updated based on the selected language.

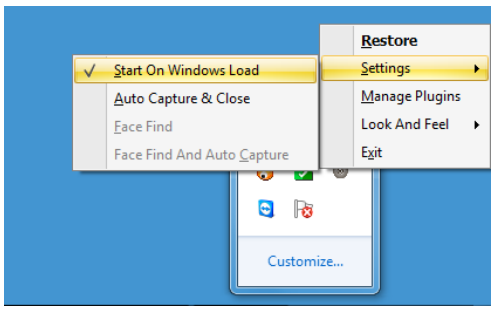
Note:

- Currently, two languages: English and Dutch are available. It is easy to add another new language to the existing list of languages but the user has to contact his reseller to add support for another language. In such case, the reseller will provide the user with the updated language file.

6.5.3 Managing Enhanced Settings

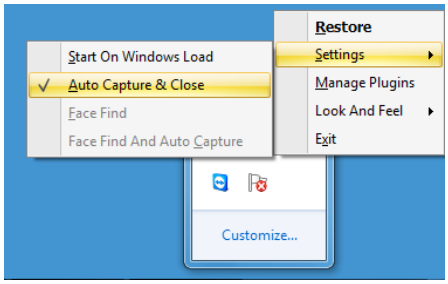
Start on Windows Load

When the user has selected this option, the application will be launched automatically when windows start. The user can also select this option from the system tray displaying the current running application icon.



Auto Capture and Close

If the feature 'Auto Capture and Close' is selected, IntelliCAP will call the capture event automatically once it is called by a main application (TWAIN mode). By this the user does not need to press the Capture button anymore… This option can also be selected from the system tray showing the current running application icon.



6.5.4 Managing Face Find and Auto Capture

This functionality enables the user to sit back and let the IntelliCAP application do the face finding and photo capturing for you.

Face Find

When this setting is checked the IntelliCAP application will follow the face(s) if found in the image live view panel on the left.

Face Find and Auto Capture

Checking this setting will notify the IntelliCAP application to automatically capture the image on finding a face in the image live view panel. The user can specify the timer to count down the number of seconds after a face is found and before it is captured. The timer is displayed in the bottom-right corner of the image live view panel. If during the countdown the application loses track of the face, the timer will freeze and on finding the face again the timer will continue from where it was stopped.

Auto Capture Counter

You can specify the time duration in seconds as the timer between find and face and auto capturing it. You can specify any number of seconds ranging from 1 through 99. By default the IntelliCAP application runs a countdown of 3 seconds.

6.6 Quick Navigation Icons

The IntelliCAP application offers the users a quick navigation panel in the top right corner above the tab pages for single-click access to important features of the application. There are three icons in this panel for the following features:

- Skin Gallery
- About
- Help

6.6.1 Skin Gallery

The IntelliCAP application comes with a bundle of more than 20 skins which are elegant as well as eye-catching. The user can click this icon and select a skin of his liking from the gallery. The selected skin will be saved in application configuration and will be loaded every time the IntelliCAP application starts until another skin has been selected. Same option is available from system tray menu also.

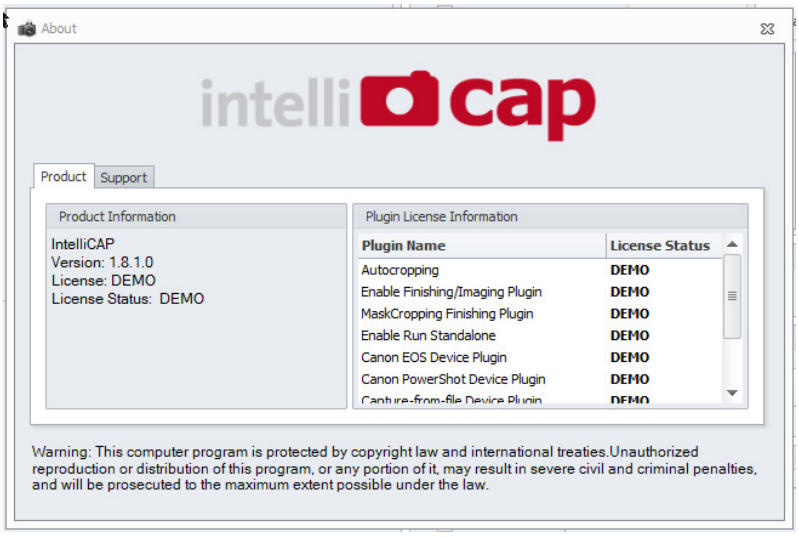
6.6.2 About

Clicking the About icon, will load a dialog window displaying the comprehensive product and license information along with support information. The About dialog window contains two tab pages:

- Product
- Support

Product

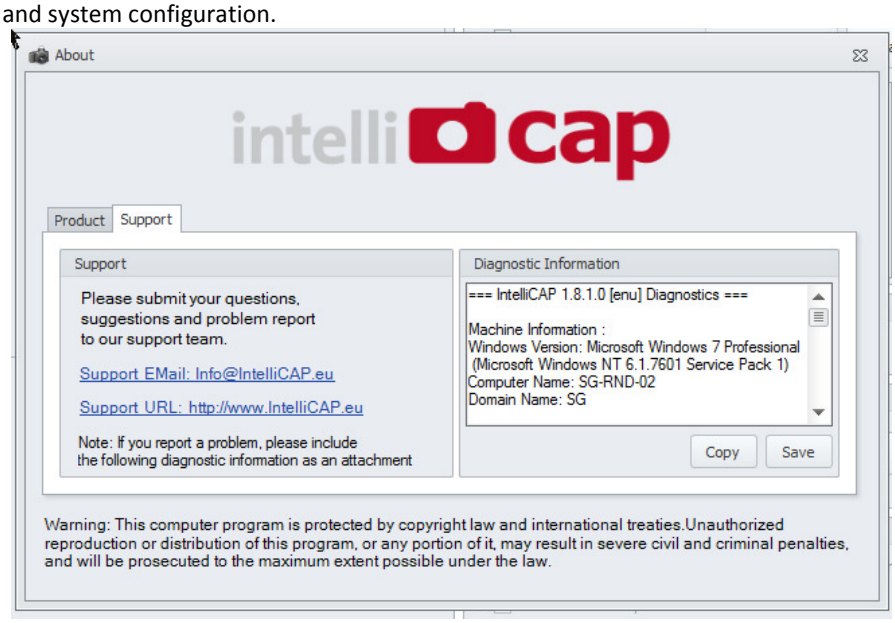
The product tab page displays the product and license information. On the left panel of the tab page, the user can find the product name, version, license type, and license status of their IntelliCAP application. On the right panel of the tab page the user can find the plugin specific license information of all the device plugins that are installed with the IntelliCAP application.



Support

The support tab page aides the user in finding the information to seek professional support for the IntelliCAP application. On the left panel of the tab page the user can find information regarding the contact information of the IntelliCAP support team. And on the right panel of the tab page a summary of the machine and system is displayed which the user can copy and/or save.

When any user of the IntelliCAP application is contacting the support team, the user should attach their machine and system information along with their query so that the support team can optimally analyze your query specific to your machine and system configuration.

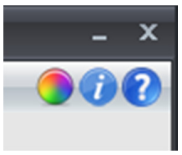

About
intelli cap
Product
Support
Support
Please submit your questions, suggestions and problem report to our support team.
Support EMail: Info@IntelliCAP.eu
Support URL: http://www.IntelliCAP.eu
Note: If you report a problem, please include the following diagnostic information as an attachment
Diagnostic Information
=== IntelliCAP 1.8.1.0 [enu] Diagnostics ===
Machine Information :
Windows Version: Microsoft Windows 7 Professional (Microsoft Windows NT 6.1.7601 Service Pack 1)
Computer Name: SG-RND-02
Domain Name: SG
Copy
Save
Warning: This computer program is protected by copyright law and international treaties.Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.

6.6.3 Help

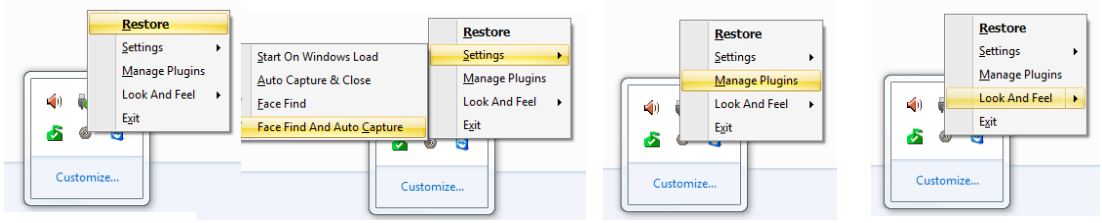
For any help on the IntelliCAP application the user can find this user manual and help document on clicking the help icon. In case the user is not satisfied by the help document, he can feel free to contact the help desk and the support team.

6.7 System Tray icon

After capturing an image or after pressing <close> (X-button), IntelliCAP keeps running in the background from your system which is indicated by the system tray. This means that the application is not completely closed and is still available for use of its operations to the user.



The following are the features available to the user



1. Restore: As mentioned earlier, when the user clicks on the Close button, the application still runs in background of the system. The Restore option lets the user restore the application to its default on the desktop. This event will also be called if the user double-clicks on the system tray.

2. Settings: A sub menu to customize the IntelliCAP application
   - Start on Windows Load: On selecting this option, the application launches automatically when windows is starting.
   - Auto Capture and Close: If this feature is selected by the user, IntelliCAP will call the capture event automatically once it is called by a main application (TWAIN mode). By this the user does not need to press the Capture button anymore
   - Face Find: Check this to enable the face find functionality of the IntelliCAP application.
   - Face Find and Auto Capture: On checking this setting, the application will automatically capture the image on finding a face in the image live view panel.

3. Manage Plugins: The managing plugins functionality mentioned earlier in the Extra Tab page can be accessed from the system tray icon as well.

4. Look and Feel: You can change the skin of the IntelliCAP application to your liking. Here you will find more than two dozen skins to choose from. Once any skin is selected, it will be saved in your settings and the next time you start the application, the skin that you selected will remain loaded.

5. Exit: This option will help the user to completely exit or close the current running IntelliCAP instance.

7.0 IntelliCAP Application Device Plugins

IntelliCAP supports the following plugins;

- WDM/DirectShow
- Canon PowerShot
- Canon SLR
- Windows Image File (=Virtual Capture Device)

8.0 WDM/DirectShow Device Plugin

8.1 Introduction

The WDM/DirectShow Device Plugin is designed to work with webcams and other WDM devices.

8.2 Supported Cameras for WDM/DirectShow Device Plugin

- All DirectShow Compatible Devices

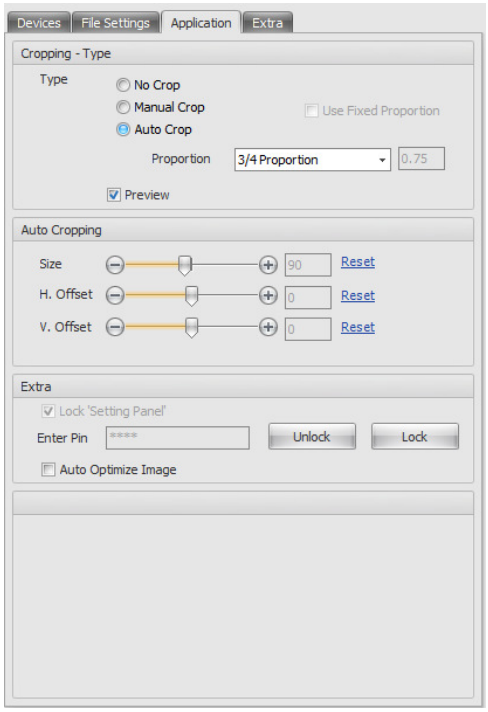
Attention! This plugin does not support Canon, Olympus or Nikon cameras.

Some common webcams supported are the following:

- Logitech web cameras: http://www.logitech.com/
- Creative web cameras: http://us.creative.com/
- Microsoft web camera's: http://www.microsoft.com/hardware/

8.3 Using WDM/DirectShow Device Plugin

8.3.1 Managing the Camera Tab



The Camera control tab lets you adjust the image settings of the WDM Camera (Webcam) to your requirements. You can adjust the settings of the following parameters by selecting and inputting the required values to it.

Current Size

All the resolutions which are supported by the WDM camera are accessible via this plugin. This allows you to capture good quality pictures via a USB webcam. It is noted that most of the competitor products support only one resolution (640x480), by which poor images are captured via the camera.

All the available image resolutions are displayed in the dropdown collection from which you can choose an image resolution of your liking.

Brightness

The brightness feature lets you adjust the brightness of the image in the Live View panel. The user can either increase or decrease the brightness value. The value ranges from 0 through 255.

Contrast

You can adjust and manage the contrast of the image by using the Contrast option. You can either increase or decrease the value as per requirement of the image.

White Balance

The white balance for the image to be captured can be managed by using this feature. The user can select the value for the image as per his requirement.

Saturation

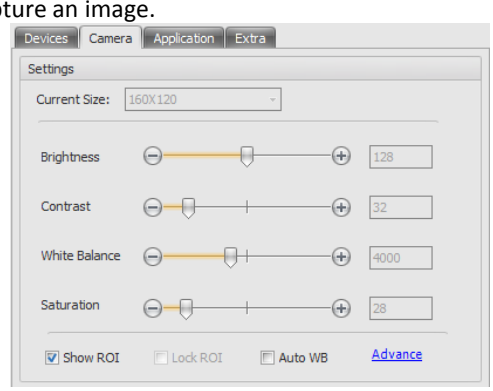
The user can select and set the saturation value for the image.

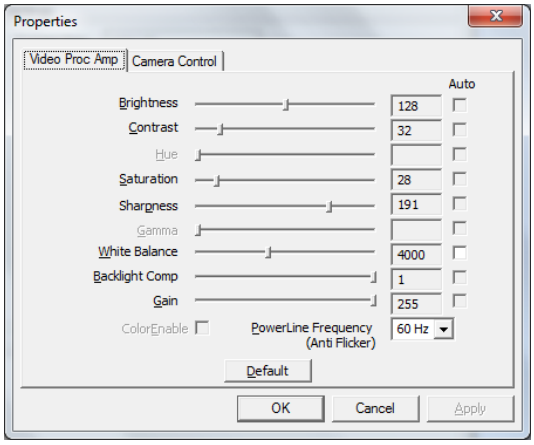
Show ROI

ROI refers to the Region of Interest and offers you the possibility to select only that part of the live view which is to your interests. Actually you should consider this ROI feature as an advanced digital zoom, which allows you to define the zoom size and position.

Follow the steps below to use this feature:

- The Live View window shows the image where the camera is focused on.
- Select the option 'Show ROI'. When this option is selected, a red rectangle, called ROI box, appears inside the Live View window.
- Resize / Move the ROI box so as to select your region or interest.
- Next, double-click on the ROI box and the live view window will be updated according to coordinates the ROI box.
- The new live view will be used the next time you capture an image.





Lock ROI

If this feature is enabled, you are only able to resize the ROI box based on the fixed height/width ratio (Application tab page -> Proportion). If this feature is not enabled, you are able to resize the ROI box.

The steps below will guide you to use this feature:

- Select the Applications tab.
- Now, select the proportion ratio as per your requirement from the drop down list.
- Go to the Camera tab and select the Lock ROI option.
- Next, select Show ROI. The ROI Box appears to select the region of interest.
  (Note: This red rectangle will be of the proportion that is selected in the proportion ratio option)
- Select the required region of interest (ROI).
- Double click on the image to view the selected ROI. (The live view will be updated according to the defined ROI)
- Capture an image

Auto WB

Auto White balance (WB) is the process of automatically removing unrealistic color casts, so that objects which appear white in person are rendered white in your photo. The Auto WB feature sets the white balance values automatically for the image to be captured.
Note: This feature will only be available for use if the selected device supports it!

Advance

The Advance button allows you to configure advanced settings of the selected device. The settings specified in the Advance settings, are device specific and you are able to configure them as per your requirements.

9.0 Canon EOS Device Plugin

9.1 Introduction

Canon EOS Device Plugin is designed for full control of the Canon SLR (reflex) cameras, automatic ID Photography, image transfer to TWAIN Compatible ID Card management software and image databases, or save to disk.

9.2 Supported Cameras for Canon EOS Device Plugin

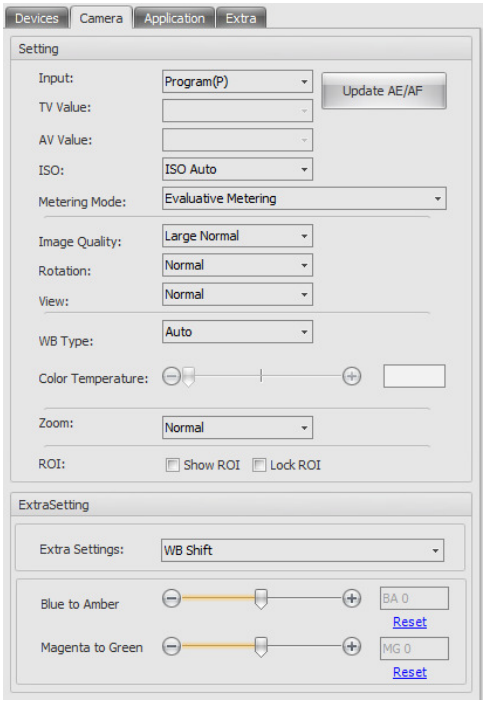
Canon EOS Device Plugin supports the following Canon SLR cameras (including the Live View!):

- The following cameras have been tested:
  - Canon EOS 500D / Canon DIGITAL REBEL T1i
  - Canon EOS 550D / Canon DIGITAL REBEL T2i
  - Canon EOS 1000D / Canon DIGITAL REBEL XS
  - Canon EOS 1100D / Canon DIGITAL REBEL T3
  - Canon EOS 40D

- The following cameras have not been tested.
  Before purchasing license for one of the following model, we recommend to test ALL features with a DEMO version.
  - Canon EOS 450D / Canon DIGITAL REBEL XSi
  - Canon EOS 600D
  - Canon EOS 50D
  - EOS 60D
  - EOS 5D Mark II
  - EOS 7D
  - EOS-1Ds Mark III
  - EOS-1D Mark III,
  - EOS-1D Mark IV

- The following cameras are not supported:
  - Canon EOS 1D Mark II
  - Canon EOS 20D
  - Canon EOS 30D
  - Canon EOS 1Ds Mark II
  - Canon EOS 350D
  - Canon EOS REBEL XT
  - Canon EOS 5D
  - Canon EOS 1D Mark II N
  - Canon EOS 400D
  - Canon EOS REBEL XTi

  Note: If customer is able to provide us a model, we are willing to make an effort to analyze the product and to add full support for this model.



9.3 Using Canon EOS Device Plugin

9.3.1 Managing the Camera Tab

The Camera tab lets the user manage the different settings of his Canon SLR camera. Settings which are not supported by the attached Canon model will be disabled automatically by the interface.

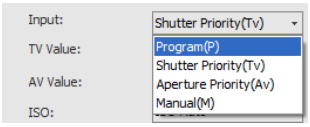
Managing Settings Update AE/AF

On clicking the <Update AE/AF> button the IntelliCAP application updates the Auto-Exposure and Auto-Focus settings of the Canon EOS device to the best exposure and focus.

Input

Four different modes of the camera to capture images are available for selection to the user. The four different modes are as follows:

i. Program (P): the shutter and aperture are set automatically by the camera.
ii. Shutter Priority (TV): you need to set the shutter speed manually, and the aperture value will be calculated automatically.
iii. Aperture Priority (AV): you need to set the aperture manually, and accordingly the shutter speed will be calculated automatically.
iv. Manual (M): you have to set the shutter speed and the aperture manually.



You can select the desired mode according to your requirements.

Attention!
Canon SLR cameras having live image preview ability shall be set in “Auto” (P), “Exposition priority” (TV), “Aperture priority” (AV), or “Manual” (M) mode. The live image preview will not be displayed in the software window if Canon SLR camera is set in “Full Auto” mode or any of the special modes.

Note: In case of Canon EOS 1100D, the input Combo-box is disabled and the user would be required to change the input configuration manually by turning the jog dial on the camera body. If the user selects any configuration outside P, TV, AV, and M settings, the camera shall be switched off and the user would have to first select a valid setting, restart the camera, and populate the device list.

TV Value

Upon the selected Input type, the TV Value option gets activated. From the four input options, the TV Value option gets activated for:

- Shutter Priority(TV)
- Manual(M)

Required values can then be selected from the drop down list.

AV Value

The following Input type options allow the user to select the AV Value options:

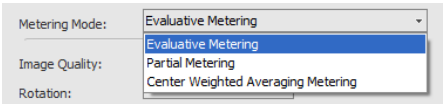
- Aperture Priority(AV)
- Manual(M)

Required values can then be selected from the drop down list.

ISO

According to the requirement, the user can select appropriate ISO values from the drop down list available.
It is recommended to increase the ISO value if you capture with a high shutter speed or if you want to minimize the risk of image blurring when the camera is shaken.

Metering Mode



With this feature, the user can select the required Metering Mode option from the list.

- Evaluative Metering: this is your camera's standard metering mode which most people use for most situations. It is well suited for most subjects including those that are backlit. It is basically just what your eyes do when looking at anything.

- Partial Metering: this setting is useful when your subject is strongly or overly backlit. The metering is weighted towards the center of the viewfinder covering approximately 13.5% of the area. This will inevitably lead to your subject being correctly exposed, with a blown out background.

- Center Weighted Averaging Metering: Probably the most common metering method implemented in nearly every digital camera and the default for those digital cameras which don't offer metering mode selection. This method averages the exposure of the entire frame but gives extra weight to the center and is ideal for portraits.

Image Quality

Select the image format and compression from the drop down list. The speed of image transfer to the TWAIN compatible software will depend on the selected image format and compression

The image Quality feature offers the following options:

- Large Normal
- Large Fine
- Medium Normal
- Medium Fine
- Small Normal
- Small Fine

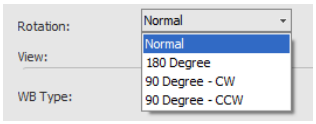
The results get reflected in the captured image.

Managing Rotation

In order to rotate the image to be captured, the Rotation feature is available to the user. The user can view the rotation effect in the Live View window if the option is selected, from the drop down list.

Following are the Rotation options available:

- Normal
- 180 degree
- 90 degree – CW
- 90 degree – CCW



View

The View option lets the user select the option to view the image as per requirement in the Live View window as well as get it captured in the same view mode.

Below listed are the View options:

- Normal
- Flip
- Mirror
- Flip and Mirror

Upon selection, the user can have the desired image.

WB Type

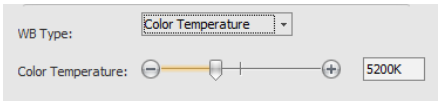
The user can select from the following different pre-configured WB Types available in the camera from the drop down list as per his requirement:

- Auto
- Daylight
- Cloudy

- Tungsten
- Fluorescent
- Flash
- Color Temperature

Color Temperature

This feature gets activated only when the Color Temperature WB Type option is selected by the user. The user can alter and adjust as per his requirement.



Color temperature is the main way in which we measure the different colors, and color correction is about filtration and other techniques that we as photographers use to achieve a desired color effect. (The desired effect may be a neutral "daylight" color, or any other effect, e.g. a slight warm-up effect for portraits.)

Managing Zoom

The Zoom feature is a digital zoom and lets the user enlarge the image to be captured. Below are the three options available to select:

- Normal
- 5X
- 10X

ROI

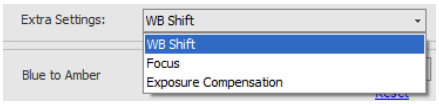
As explained in the earlier sections (IntelliCAP USB Video Device Plugin), the user can select and lock the region of interest in the image to be captured for further processing.

Following options as per requirement are available for selection:

- Show ROI
- Lock ROI

Extra Settings

Based on the setting selected from the Extra Settings drop down list box, the panel immediately below it displays the settings accordingly to the selection.

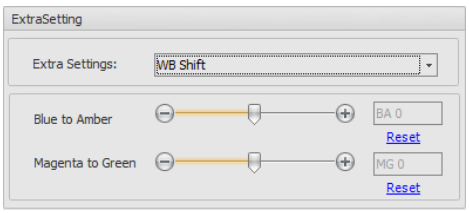


Following is the list of Extra Settings available:

- WB Shift
- Focus
- Exposure Compensation

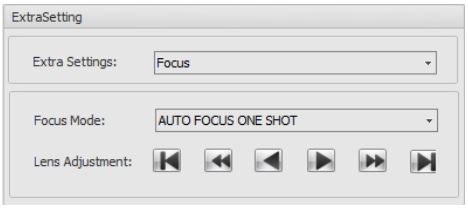
WB Shift

When the WB Shift extra setting is selected by the user, two different settings namely “Blue to Amber” and “Magenta to Green” are available. The user can select the desired values. A box displays the selected value and the Reset option lets the user reset the values to its default.



Focus

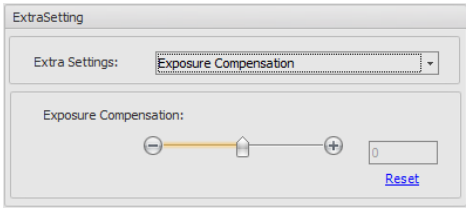
The Extra Settings for the Focus mode has the following features:



- Focus Mode: The user can select from the different Focus Modes:
  - AUTO FOCUS ONE SHOT
  - AUTO FOCUS AI SERVO
  - AUTO FOCUS AI FOCUS
  - MANUAL FOCUS

- Lens Adjustment: in order to adjust the lens of the capturing camera device manually, a panel of icons are available. On pressing the different icons the lens of the camera will be adjusted. Starting from the left hand side, the first three icons are used to zoom out the image to be captured. The last three icons are used to zoom in the image. The user can see the action reflected in the Live View window.

- Exposure Compensation: With the selection of Exposure Compensation, the user can alter and adjust the slider for setting the required value.



Note: Play with the exposure compensation values (varying from -2 to +2) when you capture the dark objects on the bright background to get the maximum image quality.

10.0 Canon PowerShot Device Plugin

10.1 Introduction

The Canon PowerShot Device Plugin is designed to get a comprehensive control over the Canon PowerShot Series cameras. This plugin is used to detect faces, capture images, and save them to physical discs from the IntelliCAP application running on your machine.

8.3.1 Supported cameras for Canon PowerShot Device Plugin

The Canon PowerShot Device Plugin supports the following list of Canon PowerShot Series cameras:

- The following cameras have been tested:
  - Canon PowerShot A800 (Revision 100B + Revision 100C)
  - Canon PowerShot A2200 (Revision 100D)
  -
  - Canon PowerShot SX130 IS (Revision 101C + Revision 101D + Revision 101F)
  - Canon PowerShot SX150 IS (Revision 100A)
  - Canon PowerShot SX210 IS (Revision 100C)

- The following cameras are supported but not been tested:
  - Canon PowerShot A480 (Revision 100B)
  - Canon PowerShot A495 (Revision 100F)
  - Canon PowerShot SX200 IS (Revision 100C + Revision 100D)

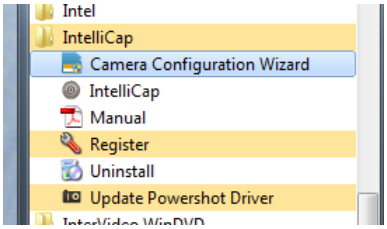
- The following cameras are supported and do NOT require SD Card (and completion of “Camera Configuration Wizard”)
  - Canon PowerShot SX100 IS
  - Canon PowerShot SX110 IS

Note: To use the Canon PowerShot SX100 IS and Canon PowerShot SX110 IS the user needs to enable the PR cameras detection in the application by setting the *<EnablePRCamera>* node to value “1” (without the inverted commas) in the PowershotConfig.xml file. The PowershotConfig.xml file can be found in the application’s Data Directory.

Additionally, to use either the Canon PowerShot SX100 IS or Canon PowerShot SX110 IS the user should only connect one camera with the machine. The application is known not to support multiple cameras at one time if one of the connected cameras is either Canon PowerShot SX100 IS or Canon PowerShot SX110 IS.

Note: If customer is able to provide us a model, we are willing to make an effort to analyze the product and to add full support for this model.

Before able to use your PowerShot camera, you have to complete the “Camera Configuration Wizard” first. Without completing this wizard, camera won’t be detected!



10.2 PowerShot Configuration Wizard

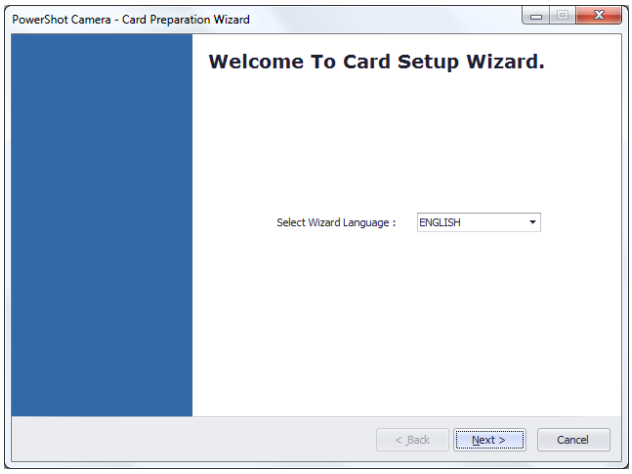
Before you can use your Canon PowerShot device with the IntelliCAP application you need to run the PowerShot Camera Configuration Wizard (also called the Camera Preparation Wizard). You can find the configuration wizard in Start → All Programs → IntelliCAP → Camera Configuration Wizard.

If you select the Canon PowerShot Device in the IntelliCAP application without configuring it through this wizard the device will not respond. To prepare the device to respond to the IntelliCAP application successfully you need to install Canon PowerShot Device Plugin specific configuration on PowerShot device SD Card. This wizard allows preparing Secure Digital (SD) memory cards for using in Canon PowerShot digital camera. When using prepared cards camera has the ability to be controlled from the computer using the PowerShot Plugin of the intelliCAP application.

Before running the wizard please prepare SD memory card which is compatible with your digital camera and has enough storage capacity. The card should not be set to read-only (locked) state. Also, the camera should be equipped with batteries, and should not be connected to the computer. The computer should be equipped with an SD memory card reader.

Warning! To prepare the card you will need a card reader. When a card is being prepared it requires direct recording, so a preparation of card inserted into camera is impossible.

To configure your PowerShot device please follow the following steps:

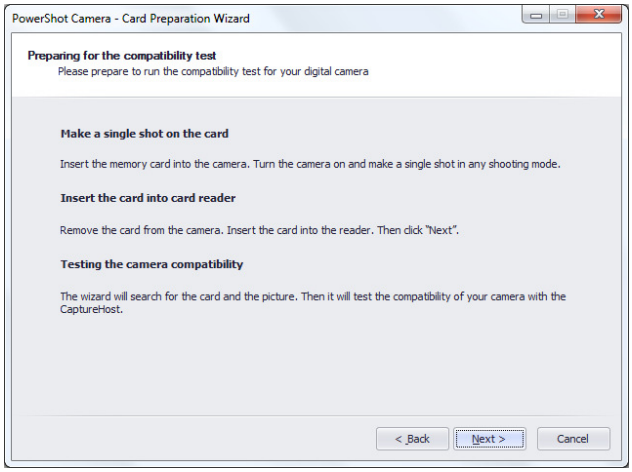


Before configuring the PowerShot device, please make sure that a SD card has been inserted into the camera and accordingly press the “Next” button.

Following steps need to be peformed;

1. Make a single shot on the card - Insert the memory card into the camera, turn the camera on and make a single shot in any shooting mode.
2. Insert the card into card reader - Remove the card from the camera, Insert the card into the reader
3. Click “Next”.

The wizard will search for the card and the picture. Then it will test the compatibility of your camera with the PowerShot Device Plugin.


PowerShot Camera - Card Preparation Wizard
Preparing for the compatibility test
Please prepare to run the compatibility test for your digital camera
Make a single shot on the card
Insert the memory card into the camera. Turn the camera on and make a single shot in any shooting mode.
Insert the card into card reader
Remove the card from the camera. Insert the card into the reader. Then click "Next".
Testing the camera compatibility
The wizard will search for the card and the picture. Then it will test the compatibility of your camera with the CaptureHost.
< Back
Next >
Cancel

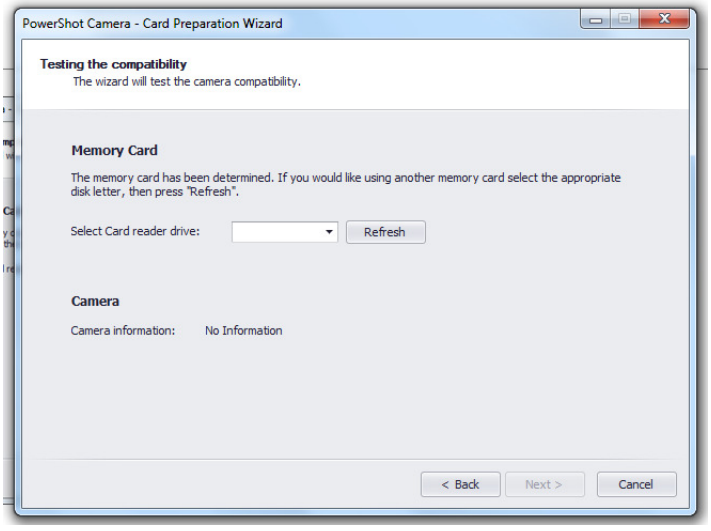
Select the SD card drive to install the Canon PowerShot device plugin configuration.

The wizard will test the camera compatibility.

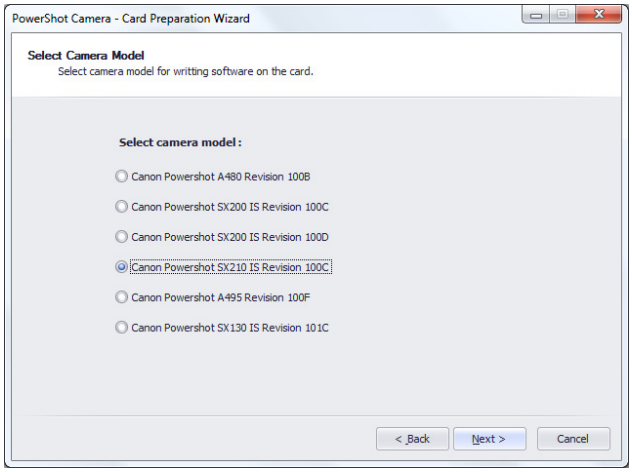
- **Memory card -** The memory card has been determined (has not been determined). If you would like using another memory card (insert a memory card and) select the appropriate disk letter, then press “Refresh".
- **Camera -** Your camera is compatible with the PowerShot Device Plugin. You may continue preparing the card. Please press “Next”.

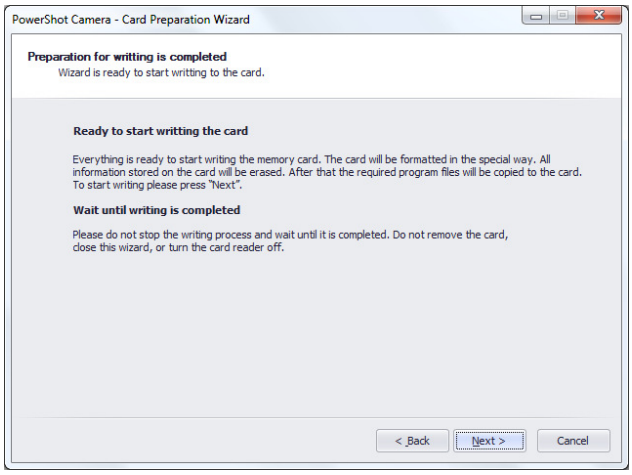
  Warning! Your camera is not compatible with the PowerShot Device Plugin or the card model cannot be determined. Using the prepared card with an incompatible camera model may cause problems. Camera control from the computer is possible only for compatible card models.

  Warning! You card has too small storage capacity. Shooting may not be possible. It is not recommended to continue preparing the card. Please use memory cards with larger storage capacity.


PowerShot Camera - Card Preparation Wizard
Testing the compatibility
The wizard will test the camera compatibility.
Memory Card
The memory card has been determined. If you would like using another memory card select the appropriate disk letter, then press "Refresh".
Select Card reader drive:
Refresh
Camera
Camera information:
No Information
< Back
Next >
Cancel

Select your Canon PowerShot device (in case it is NOT detected / selected automatically)


PowerShot Camera - Card Preparation Wizard
Select Camera Model
Select camera model for writting software on the card.
Select camera model :
Canon Powershot A480 Revision 100B
Canon Powershot SX200 IS Revision 100C
Canon Powershot SX200 IS Revision 100D
Canon Powershot SX210 IS Revision 100C
Canon Powershot A495 Revision 100F
Canon Powershot SX130 IS Revision 101C
< Back
Next >
Cancel

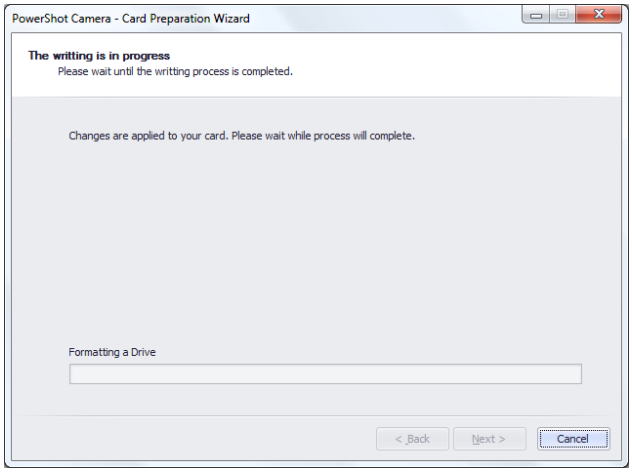

PowerShot Camera - Card Preparation Wizard
Preparation for writting is completed
Wizard is ready to start writting to the card.
Ready to start writting the card
Everything is ready to start writing the memory card. The card will be formatted in the special way. All information stored on the card will be erased. After that the required program files will be copied to the card. To start writing please press "Next".
Wait until writing is completed
Please do not stop the writing process and wait until it is completed. Do not remove the card, close this wizard, or turn the card reader off.
< Back
Next >
Cancel

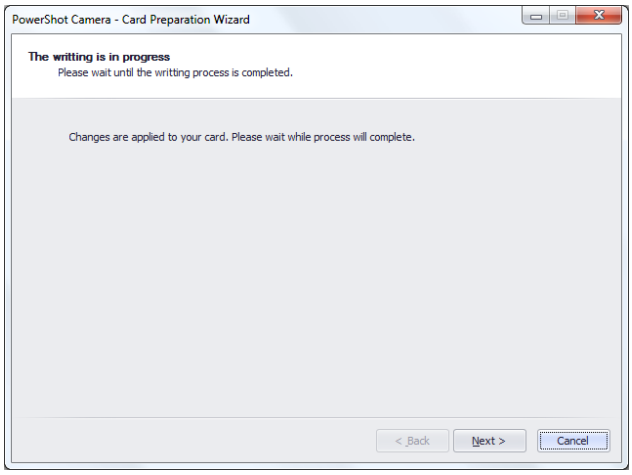
Settings will be installed on your SD card.

Everything is ready to start writing the card;

- **Ready to start writing the card** - Everything is ready to start writing the memory card. The card will be formatted in the special way. All information stored on the card will be erased. After that the required program files will be copied to the card. To start writing please press “Next”.
- **Wait until writing is completed -** Please do not stop the writing process and wait until it is completed. Do not remove the card, close this wizard, or turn the card reader off.

Warning! There are some files detected on the card. Please note that all the information stored on the card will be lost.


PowerShot Camera - Card Preparation Wizard
The writting is in progress
Please wait until the writting process is completed.
Changes are applied to your card. Please wait while process will complete.
Formatting a Drive
< Back
Next >
Cancel


PowerShot Camera - Card Preparation Wizard
The writting is in progress
Please wait until the writting process is completed.
Changes are applied to your card. Please wait while process will complete.
< Back
Next >
Cancel

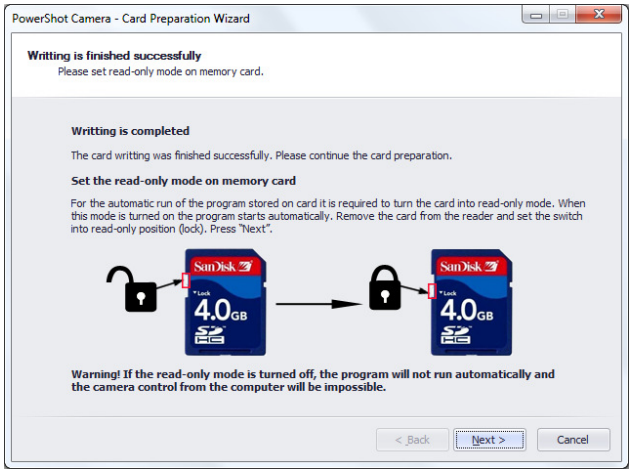
The writing is in progress. Please wait until the writing process is completed.

- Card formatting
- Setting 'bootable' attribute
- Copying the files
- Finalizing

After the configuration has been written on your SD card, your camera needs to run the recently installed configuration. To run the configuration from the SD card, you need to lock the SD card to boot the camera device from the SD card by sliding the lock as shown below.

Set the read-only mode on memory card.
For the automatic run of the program stored on card it is required to turn the card into read-only mode. When this mode is turned on the program starts automatically. Remove the card from the reader and set the switch into read-only position (lock). Press "Next".

Warning! If the read-only mode is turned off, the program will not run automatically, and the camera control from computer will be impossible.


PowerShot Camera - Card Preparation Wizard
Writting is finished successfully
Please set read-only mode on memory card.
Writting is completed
The card writting was finished successfully. Please continue the card preparation.
Set the read-only mode on memory card
For the automatic run of the program stored on card it is required to turn the card into read-only mode. When this mode is turned on the program starts automatically. Remove the card from the reader and set the switch into read-only position (lock). Press "Next".
Warning! If the read-only mode is turned off, the program will not run automatically and the camera control from the computer will be impossible.
< Back
Next >
Cancel

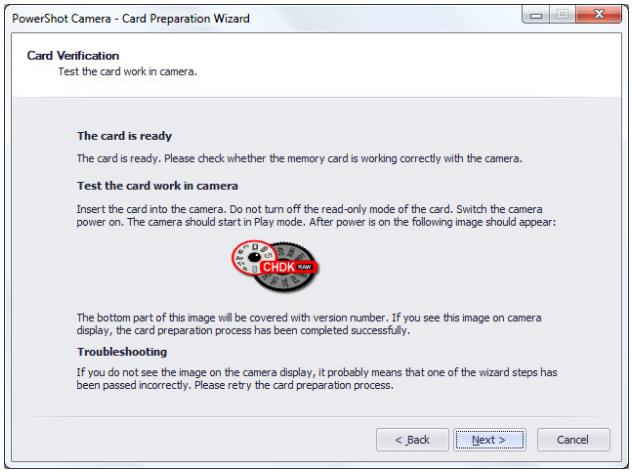
Card verification

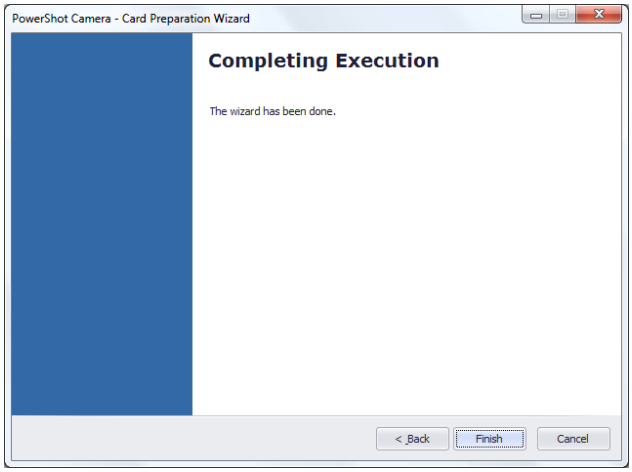
The card is ready - Please check whether the memory card is working correctly with the camera.

Check the card working with camera - Insert the card into the camera. Do not turn off the read-only mode of the card. Switch the camera power on. The camera should start in Play mode. After power is on the following image should appear:

The bottom part of this image will be covered with version number. If you see this image on camera display, the card preparation process has been completed successfully. Your camera now can be controlled from a computer. Please do not remove the memory card from camera while working with intelliCAP

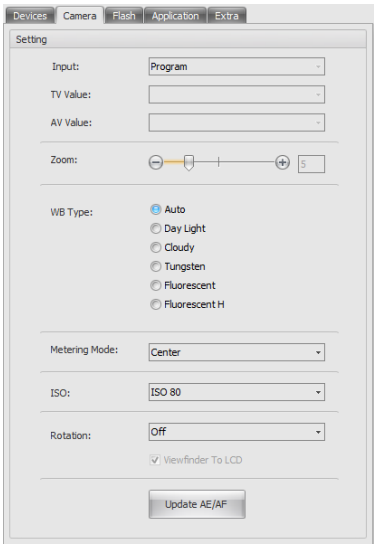
Troubleshooting - If you do not see the image on the camera display, it probably means that one of the wizard steps has been passed incorrectly. Please retry the card preparation process.


PowerShot Camera - Card Preparation Wizard
Card Verification
Test the card work in camera.
The card is ready
The card is ready. Please check whether the memory card is working correctly with the camera.
Test the card work in camera
Insert the card into the camera. Do not turn off the read-only mode of the card. Switch the camera power on. The camera should start in Play mode. After power is on the following image should appear:
The bottom part of this image will be covered with version number. If you see this image on camera display, the card preparation process has been completed successfully.
Troubleshooting
If you do not see the image on the camera display, it probably means that one of the wizard steps has been passed incorrectly. Please retry the card preparation process.
< Back
Next >
Cancel


PowerShot Camera - Card Preparation Wizard
Completing Execution
The wizard has been done.
< Back
Finish
Cancel

10.3 Using Canon PowerShot Devices

10.3.1 Managing the Camera Tab



The user can configure the device specific settings and manage the image capturing functionality using the settings panel on this tab. The settings that are not supported by the attached Canon PowerShot camera will be disabled automatically by the interface.

Managing Settings Input

Four different modes of the camera to capture images are available for selection to the user. The four different modes are as follow:

i. Program (P): the shutter and aperture are set automatically by the camera.
ii. Shutter Priority (TV): you need to set the shutter speed manually, and the aperture value will be calculated automatically.
iii. Aperture Priority (AV): you need to set the aperture manually, and accordingly the shutter speed will be calculated automatically.
iv. Manual (M): you have to set the shutter speed and the aperture manually.

You can select the desired mode according to your requirements by changing the jog dial on the Canon PowerShot device. If you select any setting outside the four settings mentioned above, the camera shall be switched off. To use the Canon PowerShot device you would be required to set the jog dial to one of the settings mentioned above, start the camera, and populate the device list.

TV Value

Upon the selected Input type, the TV Value option gets activated. From the four input options, the TV Value option gets activated for:

- Shutter Priority(TV)
- Manual(M)

Required values can then be selected from the drop down list.

AV Value

The following Input type options allow the user to select the AV Value options:

- Aperture Priority(AV)
- Manual(M)

Required values can then be selected from the drop down list.

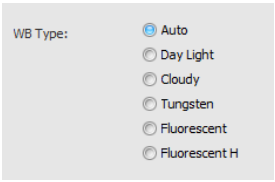
Managing Zoom

The Zoom feature is a digital zoom and lets the user enlarge the image to be captured. The image can be zoomed up to 25X through the Canon PowerShot device.

WB Type

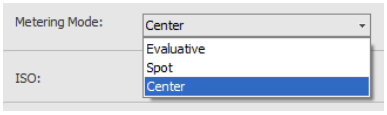
The user can select from the following different pre-configured WB Types available in the camera from the drop down list as per his requirement:

- Auto
- Daylight
- Cloudy
- Tungsten
- Fluorescent
- Fluorescent H



Metering Mode

With this feature, the user can select the required Metering Mode option from the list.



- Evaluative Metering: this is your cameras standard metering mode which most people use for most situations. It is well suited for most subjects including those that are backlit. It is basically just what your eyes do when looking at anything.

- Partial Metering: this setting is useful when your subject is strongly or overly backlit. The metering is weighted towards the center of the viewfinder covering approximately 13.5% of the area. This will inevitably lead to your subject being correctly exposed, with a blown out background.

- Center Weighted Averaging Metering: Probably the most common metering method implemented in nearly every digital camera and the default for those digital cameras which don't offer metering mode selection. This method averages the exposure of the entire frame but gives extra weight to the center and is ideal for portraits.

ISO

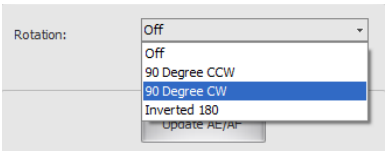
According to the requirement, the user can select appropriate ISO values from the drop down list available.
It is recommended to increase the ISO value if you capture with a high shutter speed or if you want to minimize the risk of image blurring when the camera is shaken.

Managing Rotation

In order to rotate the image to be captured, the Rotation feature is available to the user. The user can view the rotation effect in the Live View window if the option is selected, from the drop down list.

Following are the Rotation options available:

- Off
- 90 degree – CW
- 90 degree – CCW
- Inverted 180 degree



Update AE/AF

On clicking the <Update AE/AF> button the IntelliCAP application updates the Auto-Exposure and Auto-Focus settings of the Canon PowerShot device to the best exposure and focus.

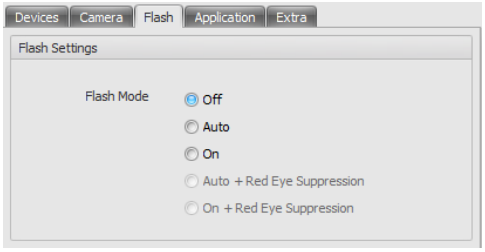
Managing the Flash Tab

Specifically for the Canon PowerShot devices the user can configure the flash settings of the Canon PowerShot device from here.

Flash Mode

The Canon PowerShot camera can be used with following Flash Modes:

- Off
- Auto
- On
- Auto + Red Eye Suppression
- On + Red Eye Suppression



Off: The flash shall remain off in all lighting conditions

Auto: The flash shall remain in sufficient light conditions and during low light conditions the device will use its flash to suffice the light

On: The camera will use its flash in all lighting conditions

Auto + Red Eye Suppression: In many cases the human eye reflects the camera's flash and causes the image to have a red spot in the eye. This configuration will suppress the red eye formation in the image and also use the flash selectively where it detects low light conditions.

On + Red Eye Suppression: The camera will use its flash in all lighting conditions and also suppress the red eye formation in the captured images.

11.0 Capture-From-File Device Plugin

11.1 Introduction

Capture-From-File Device Plugin is the IntelliCAP plugin that offers the user the facility to import already existing images from the file system of the computer. These imported images can be used for further modification according to the user's requirement.

11.2 Supported File Types for Capture-From-File Device Plugin

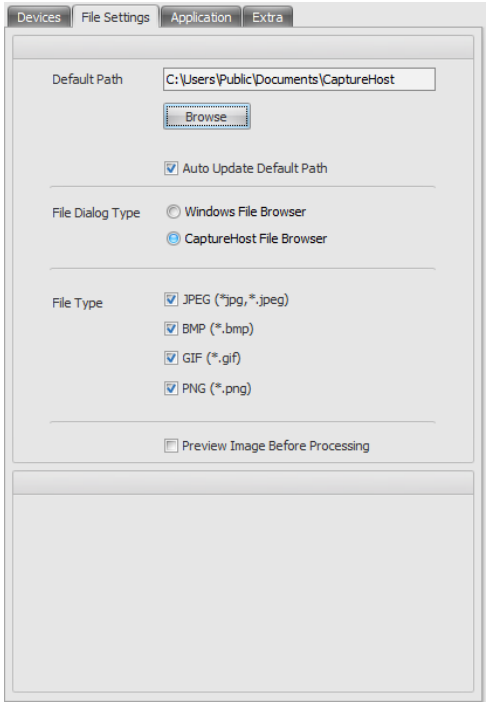
Capture-From-File Device Plugin supports the following file types:

- JPEG
- BMP
- GIF
- PNG

Note: If support for other file type is mandatory, do not hesitate to contact your reseller!

11.3 Using Capture-From-File Device Plugin

11.3.1 Managing the File Settings Tab



The "File Settings Tab" lets the user to manage the different settings for the image file to be imported (captured here).

Default Path

If the user presses the Capture button, a File Selection window will be showed which will be displaying all the images available in the Default Path.

Auto Update Default Path

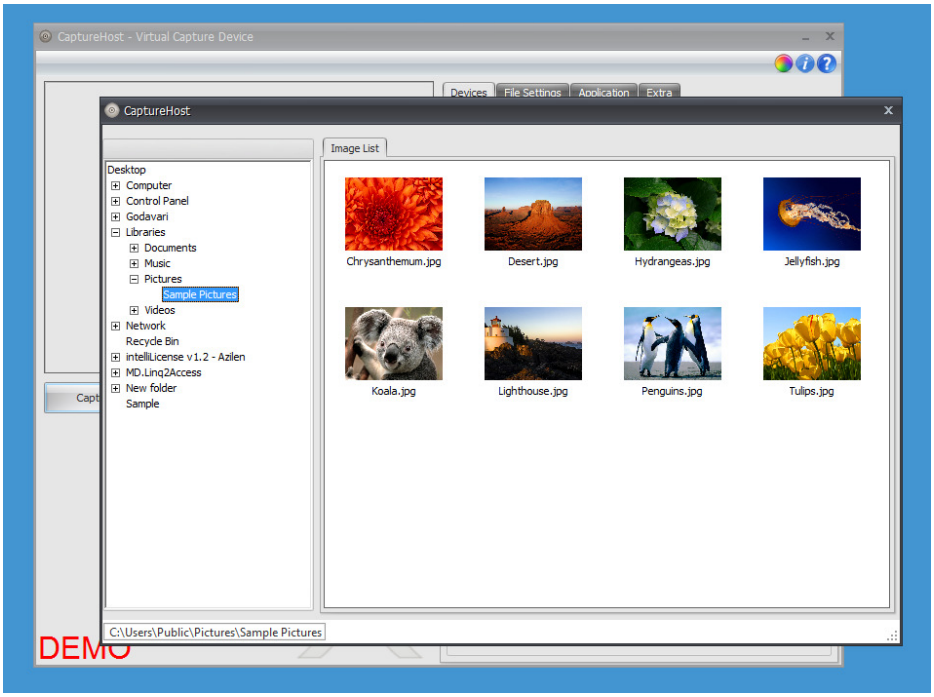
When the option Auto Update Default Path is selected by the user, the latest selected default path will be used as Default Path, the next time the user presses <capture button>.

File Dialog Type

The File Dialog Type has two options for the user to select from:

1. ***Windows File Browser:*** When this option is selected, the default windows file browser pops up to select the required image.

2. IntelliCAP ***File Browser***: Upon the selection of this option, the user is presented with the special customized browser window that displays two panels. The left side panel displays the folders and files in a tree structure format to let the user select the desired location. The right side panel displays the selected items in the thumbnail format enabling easy viewing.



Note! If you are using the IntelliCAP application on a Windows Aero enabled machine, you won't experience much difference between Windows File Browser and IntelliCAP File Browser.

File Type

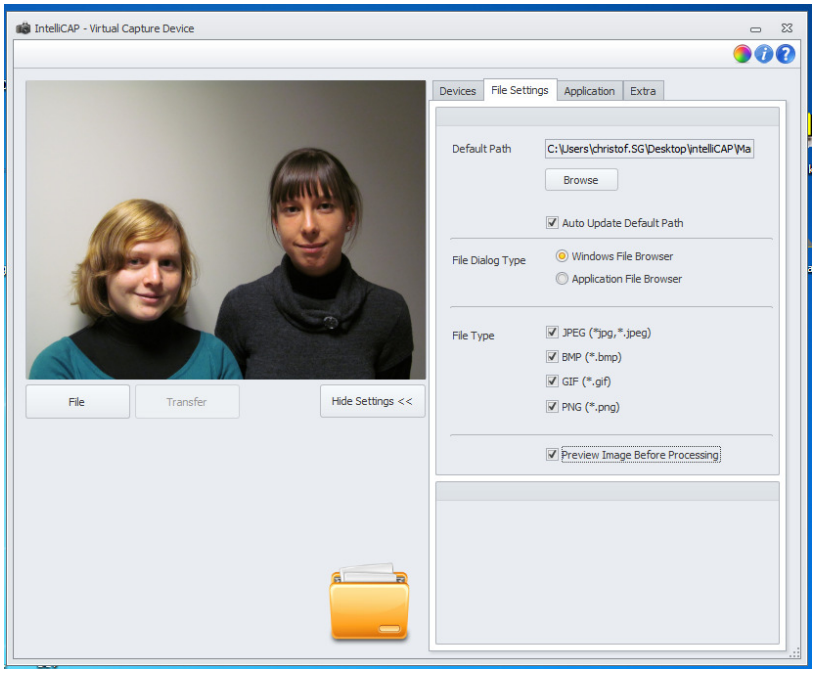
When working with the File Type option in the application interface, the user has the option to select any or all types of image files having the respective image file extension type. If any of the four are deselected, the user is restricted to select the image file of that extension type.

The following are the four image file extension types:

1. JPEG (*jpg, *jpeg)
2. BMP (*bmp)
3. GIF (*gif)
4. PNG (*png)

Preview Image before Processing

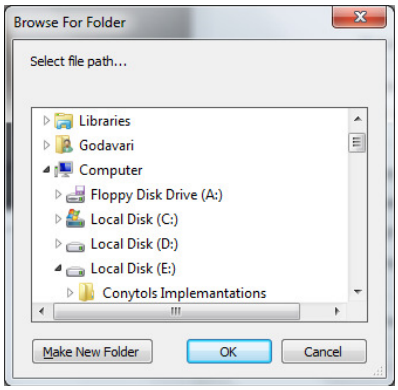
If this feature is selected, the Capture button will be replaced by 2 buttons, File and Transfer, each having a separate function. The File button should be used to select a file, via the Windows File Browser or the IntelliCAP File Browser. The Transfer button should be used to save/transfer the selected image to its desired location.



Capturing and Loading Images to the View Window

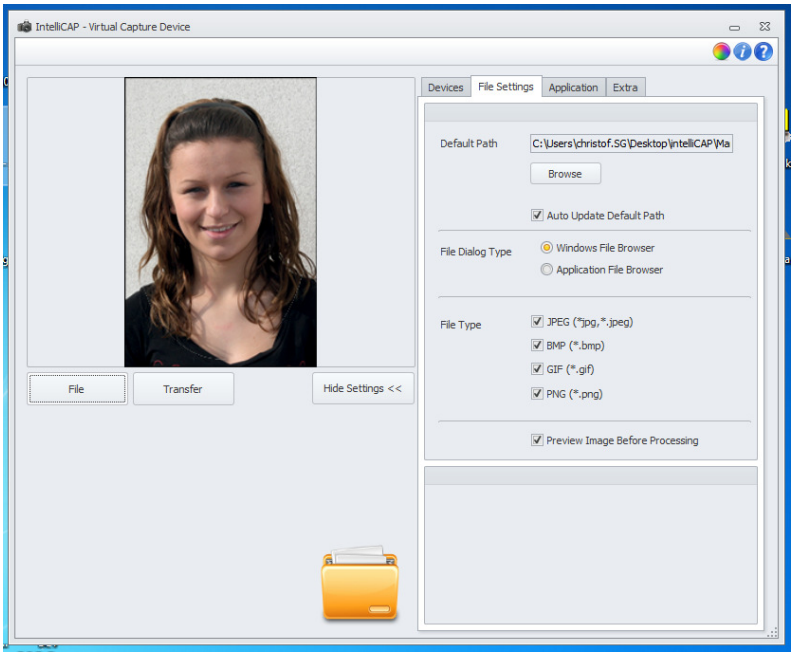
The following steps will guide the user to capture and load images from the file system to the preview window when the Dialog Type – Windows File Browser is selected:

1. Browse for the required image on the file system using the Browse button.

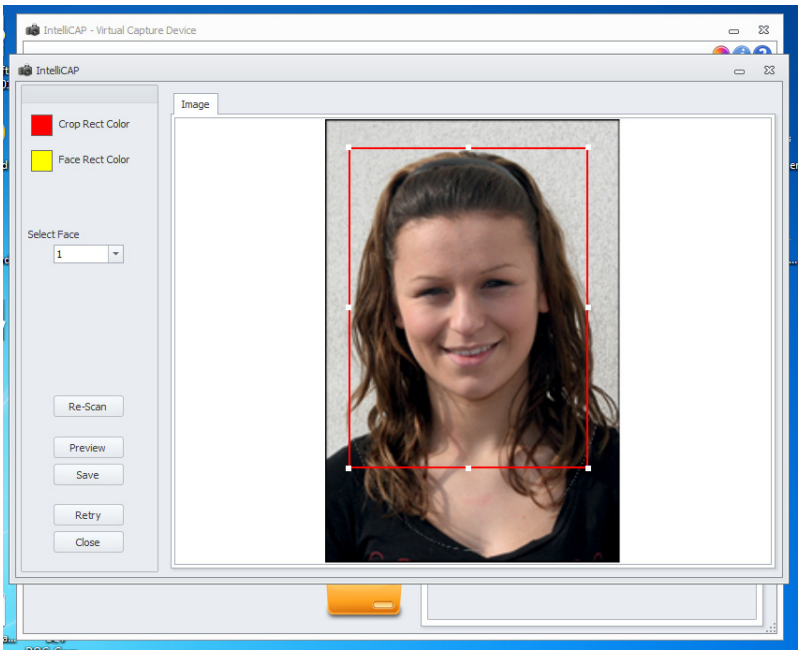


2. Press the Capture button.

3. The Virtual Host Image List window will show the images to select from.



4. To select the image for capturing, double click the image. The image will be captured and loaded to the Image window.



12.0 Appendix A: TWAIN DS

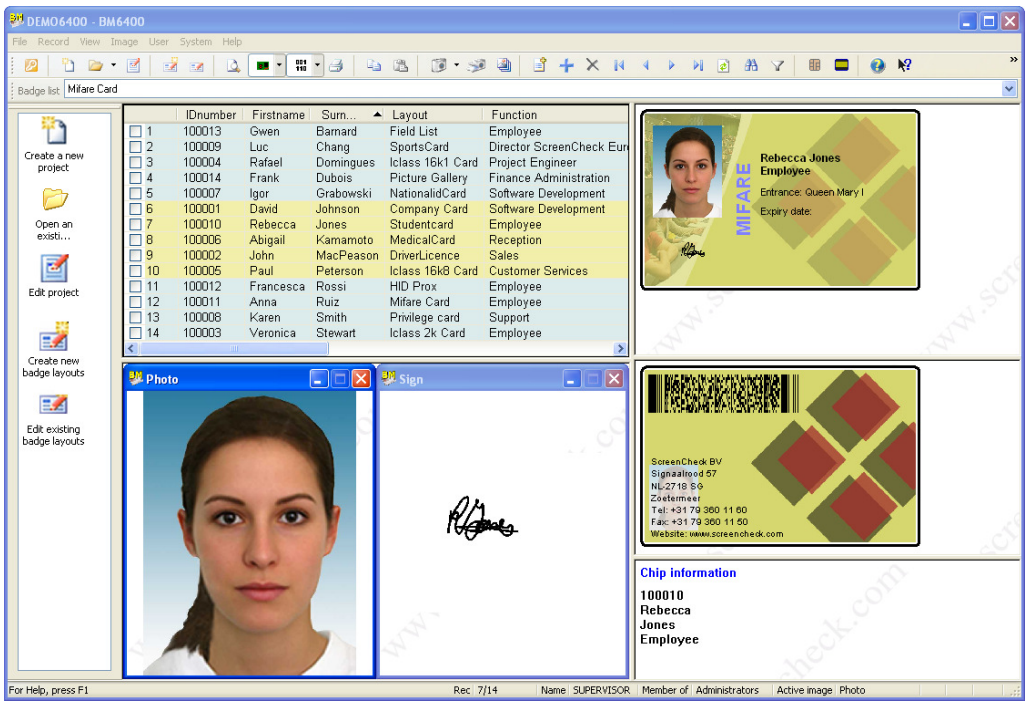
12.1 Accessing the TWAIN DS

Some examples of using the IntelliCAP application with applications that support TWAIN DS devices.

12.1.1 Using IntelliCAP with Badge Maker

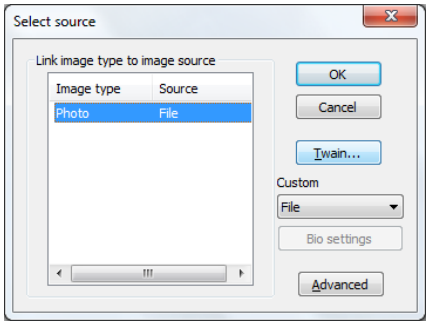
Badge Maker as a TWAIN DS accesses IntelliCAP products through the following steps:

1. Start the installed application Badge Maker and open the required project to work.

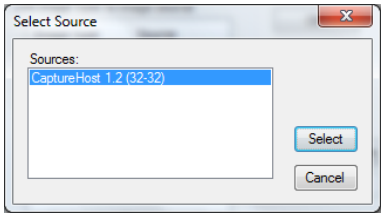

DEMO6400 - BM6400
Badge list: Mifare Card
Create a new project
Open an existi...
Edit project
Create new badge layouts
Edit existing badge layouts
IDnumber Firstname Surn... Layout Function
1 100013 Gwen Barnard Field List Employee
2 100009 Luc Chang SportsCard Director ScreenCheck Eur
3 100004 Rafael Domingues Iclass 16k1 Card Project Engineer
4 100014 Frank Dubois Picture Gallery Finance Administration
5 100007 Igor Grabowski NationalidCard Software Development
6 100001 David Johnson Company Card Software Development
7 100010 Rebecca Jones Studentcard Employee
8 100006 Abigail Kamamoto MedicalCard Reception
9 100002 John MacPeason DriverLicence Sales
10 100005 Paul Peterson Iclass 16k8 Card Customer Services
11 100012 Francesca Rossi HID Prox Employee
12 100011 Anna Ruiz Mifare Card Employee
13 100008 Karen Smith Privilege card Support
14 100003 Veronica Stewart Iclass 2k Card Employee
Rebecca Jones
Employee
Entrance: Queen Mary I
Expiry date:
MIFARE
Photo
Sign
ScreenCheck BV
Signaalrood 57
NL-2718 SG
Zoetermeer
Tel: +31 79 360 11 60
Fax: +31 79 360 11 60
Website: www.screencheck.com
Chip information
100010
Rebecca
Jones
Employee
For Help, press F1
Rec. 7/14
Name SUPERVISOR
Member of Administrators
Active image Photo

2. Select Source from the Image menu tab.

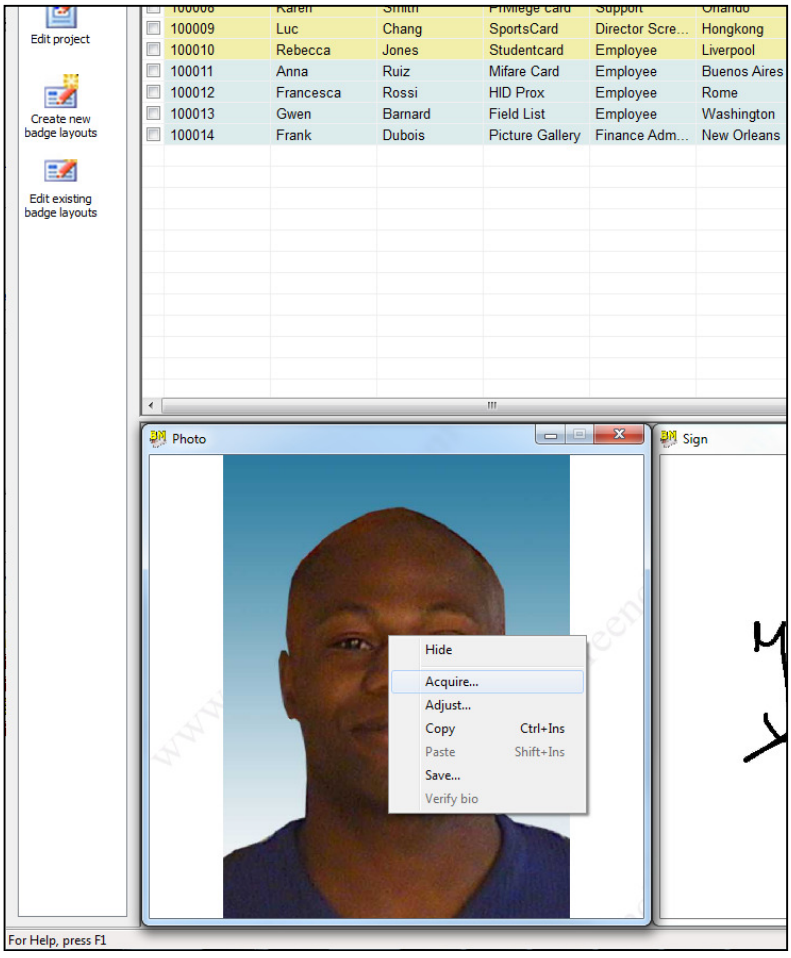
3. Select Photo as an Image Type and click Twain…



4. Select the required source IntelliCAP from the list box and press the Ok button.



5. Now select the Acquire option from the Image menu tab.



6. The application selected from the Source will open.

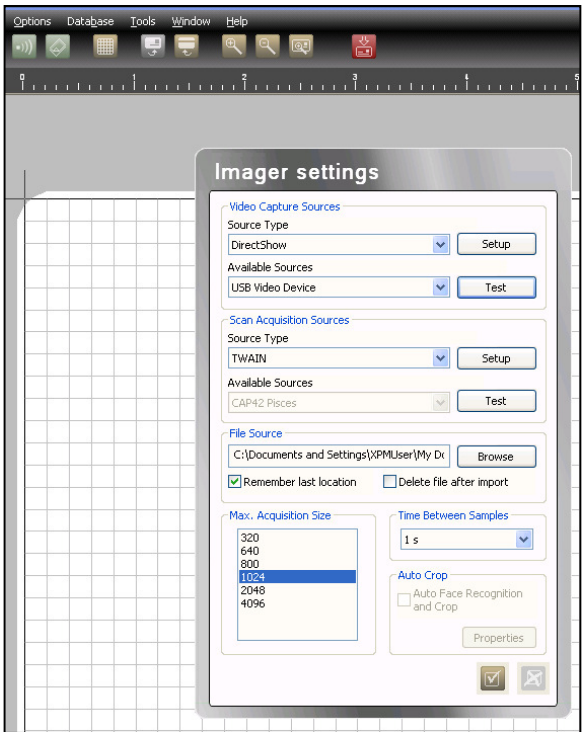
7. Press <Capture> to capture an image and transfer the result to Badge Maker.

Important Note: The images and procedures used in this example might not be exactly what you will encounter during the setup in your specific software solution but it will give you a good overall understanding of the functionality and features.

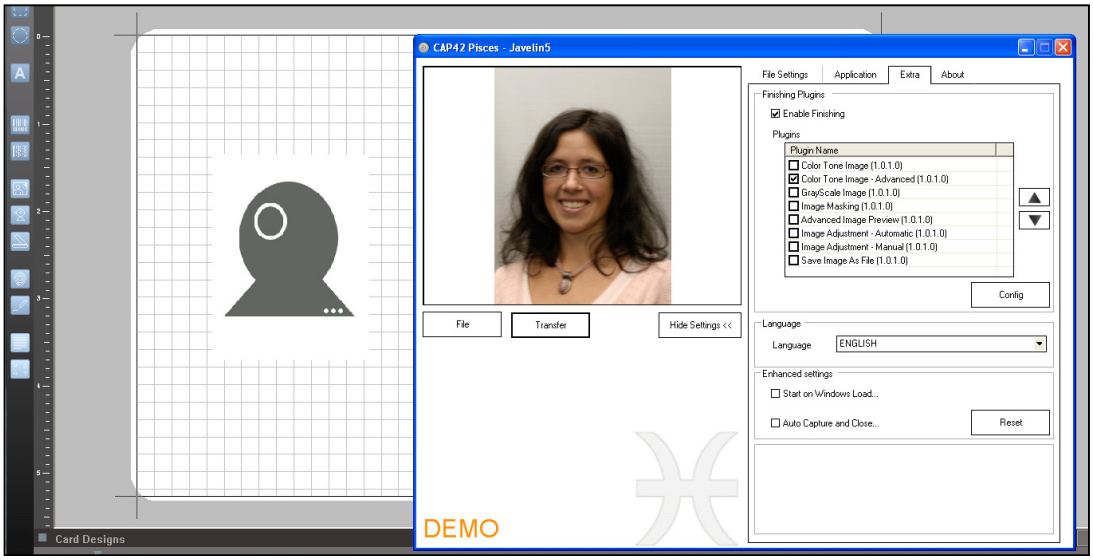
12.1.2 Using IntelliCAP with nFive / jFive

nFive / jFive as a TWAIN DS accesses IntelliCAP products through the following steps:

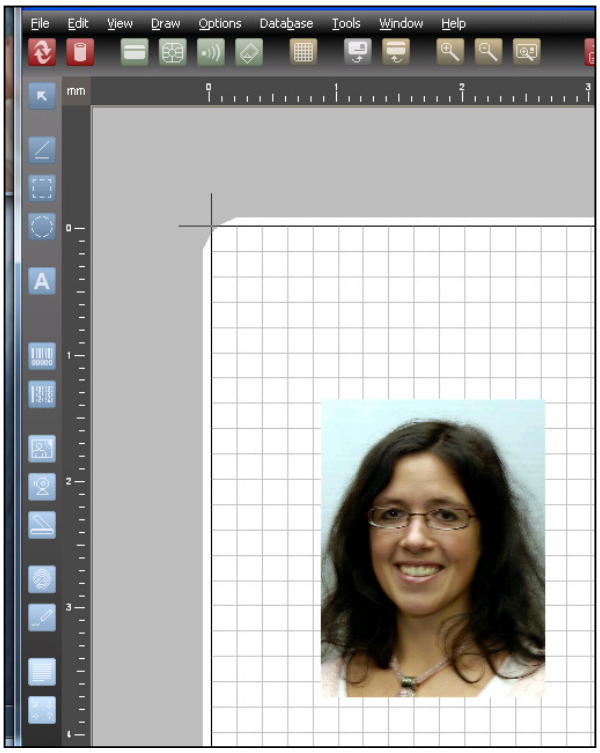
1. Open nFive or jFive
2. Go to Options > Imager Settings to configure your device.
   Select “TWAIN” as a source Type for “Scan Acquisition Sources”



3. Add an “Image with Scan Source Object” to the card-layout.
4. Press on this object and the selected IntelliCAP instance will be loaded



5. Acquired image is displayed on the card layout.

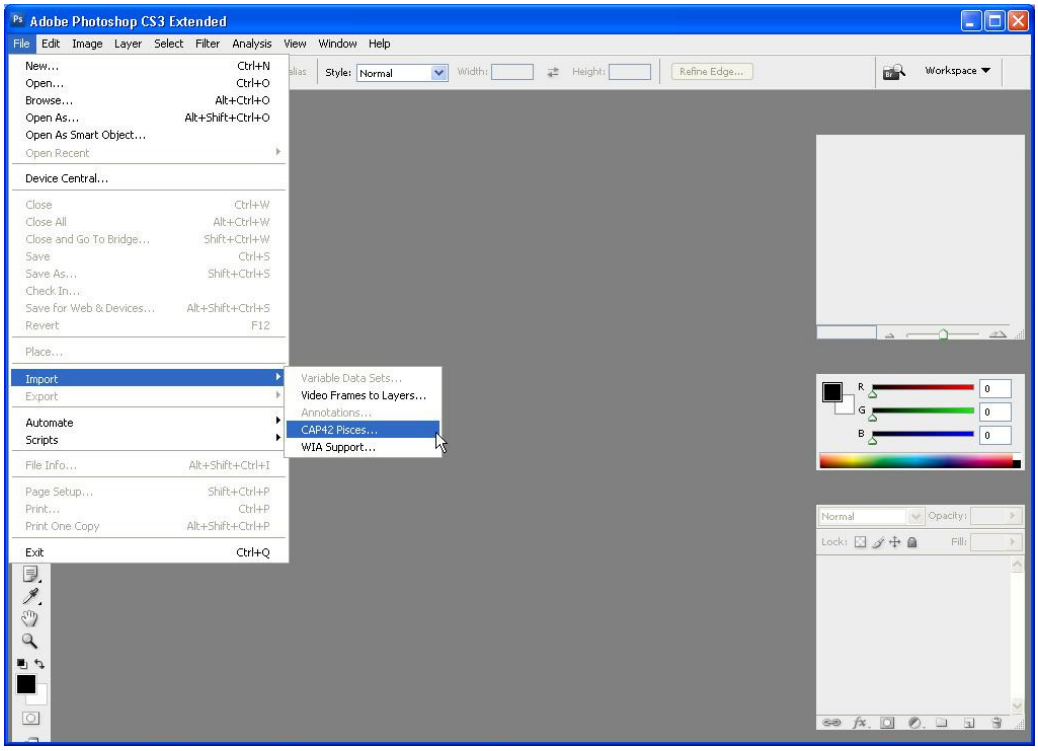


Important Note: The images and procedures used in this example might not be exactly what you will encounter during the setup in your specific software solution but it will give you a good overall understanding of the functionality and features.

12.1.3 Using IntelliCAP with Adobe Photoshop

Adobe Photoshop as a TWAIN DS accesses IntelliCAP products through the following steps:

1. Start Adobe Photoshop.
2. Go to File menu and select Import.
3. Now select the required IntelliCAP product from the list.



4. The application selected from the Import option will open.

5. Press the Capture button to capture an image and transfer the result to PhotoShop

Important Note: The images and procedures used in this example might not be exactly what you will encounter during the setup in your specific software solution but it will give you a good overall understanding of the functionality and features.

13.0 Appendix B: IP General Plugin

The purpose and a sample for each function of the IP General Plugin is given below.

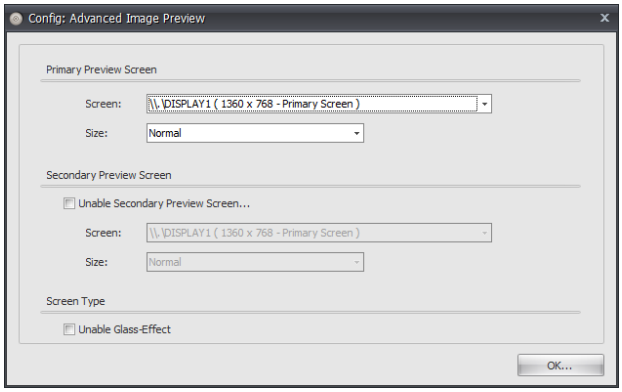
Note:

- This plug-in can be used by all IntelliCAP versions!
- If you are in need of a customized plug-in, do not hesitate to contact your reseller!

13.1 Overview

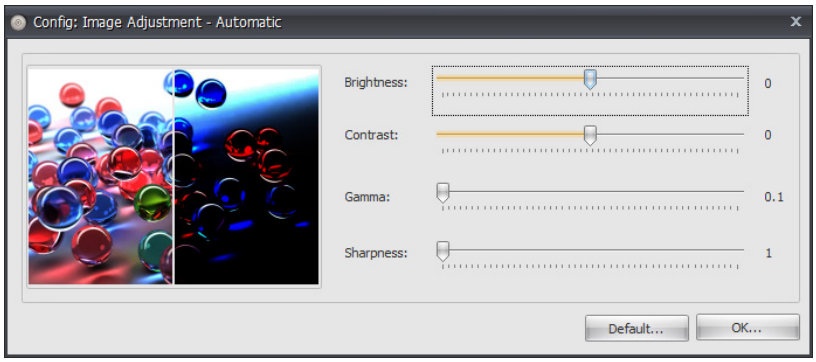
13.1.1 Advanced Image Preview (2.0.0.0)

A preview of the final image can be set by selecting this feature from the list. Additionally, this preview can also be displayed on a second monitor. Herein, the preview window is only displayed on that monitor while the IntelliCAP interface is not displayed on the monitor.



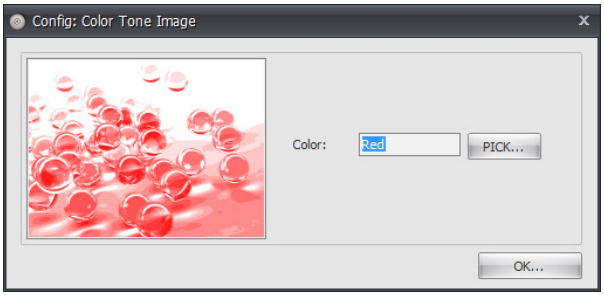
13.1.2 Image Adjustment Automatic (2.0.0.0)

The Brightness, Contrast, Sharpness and Gamma parameters will automatically get adjusted for an image based on some predefined values.



13.1.3 Color Tone Image (2.0.0.0)

Using this plugin function, the image can be converted to DUOTone. The most common sample is SEPIA. Refer the samples below to get an overview of how the plugin function works.



Sample 1:

Input Image:

Output Image:

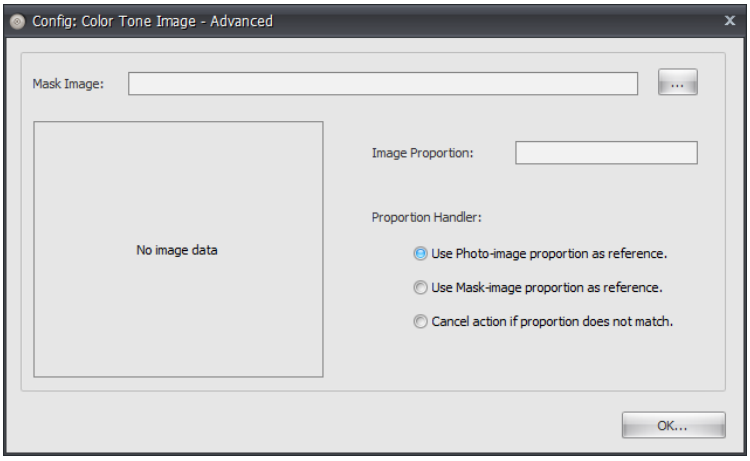
Sample 2:

Input Image:

Output Image:

13.1.4 Color Tone Image Advanced (2.0.0.0)

Based on a reference image, Color Tone Image Advanced plugin function lets the user to convert an image to DUOTone based on a reference image. It is also possible for the user to create a gradient image via this image.



Note: Most of the time you'll get the same result with the Image Masking function.

Sample 1:

Input Image:

Reference Image:

Output Image:

13.1.5 Convert to Grayscale Image (2.0.0.0)

The Grayscale Image function converts the image to grayscale.

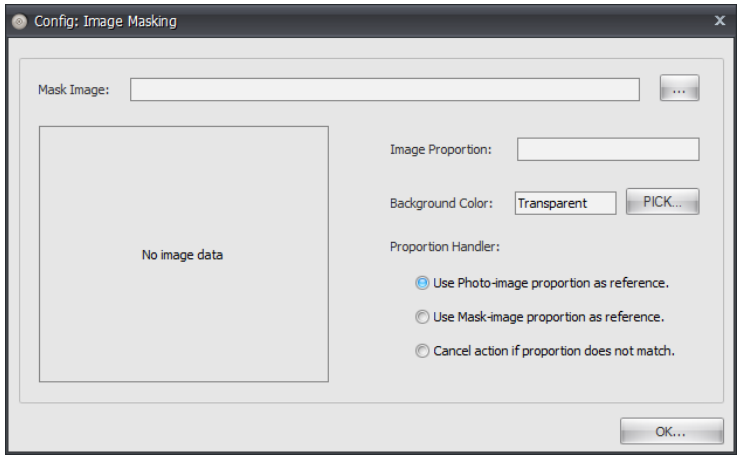
Sample 1:

Input Image:

Output Image:

13.1.6 Image Masking (2.0.0.0)

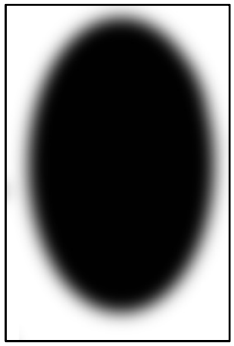
This plugin function performs a 'black and white' filter action on the captured image.



Sample 1:

Input Image:

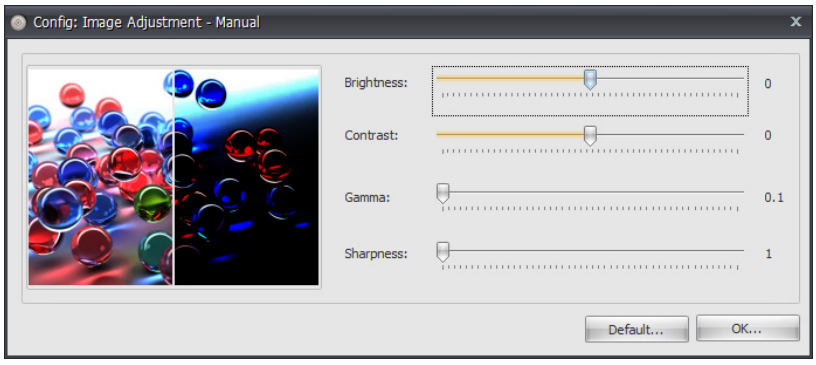
Reference Image:



Output Image:

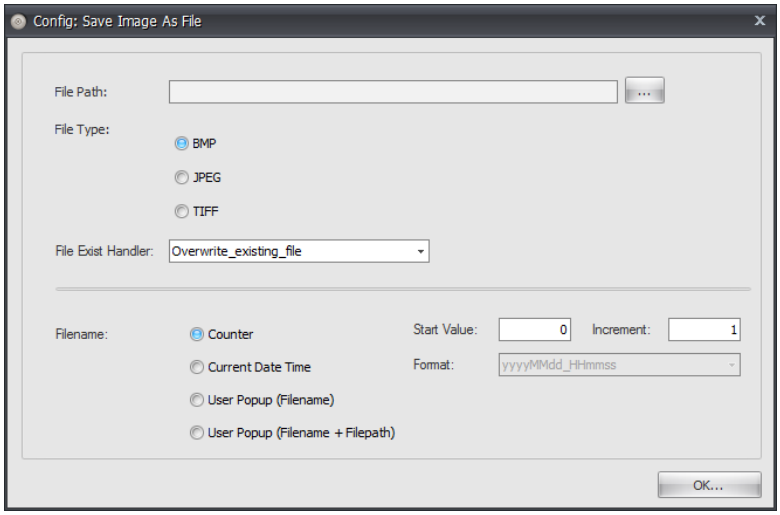
13.1.7 Image Adjustment Manual (2.0.0.0)

The Image Adjustment Manual function helps the user to alter and adjust the values of the Brightness, Contrast, Gamma and Sharpness parameters for the captured image. After capturing an image, the Image Adjustment window will be displayed to allow the user to manually adjust the image.



13.1.8 Save Image as File (2.0.0.0)

This plug-in can be used to save a copy of the captured image on a secondary location. When this plug-in is selected, a filename has to be entered by the user after capturing the image or a filename will be generated automatically based on the current date time and/or timer.

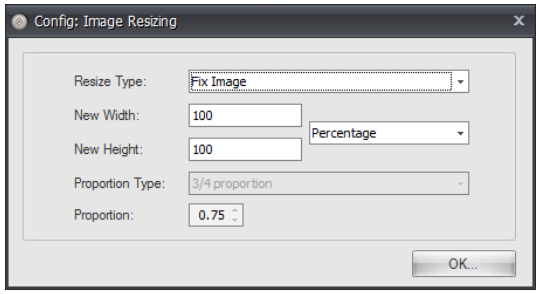


13.1.9 Convert to Black-and-White Image (2.0.0.0)

The convert to black-and-white image function converts the captured image to high contrast black and white image.

13.1.10 Image Resizing (2.0.0.0)

Image resizing function resizes the captured image to the configured resolution and size.



13.1.11 Color cropping (2.0.0.0)

The user can use this functionality to set a color as the cropping selector. The color configured in this function will be used as the color of the cropping selector.

14.0 APPENDIX C: IP MaskCropping Plugin

The purpose and a sample for each function of the IP MaskCropping Plugin is given below.

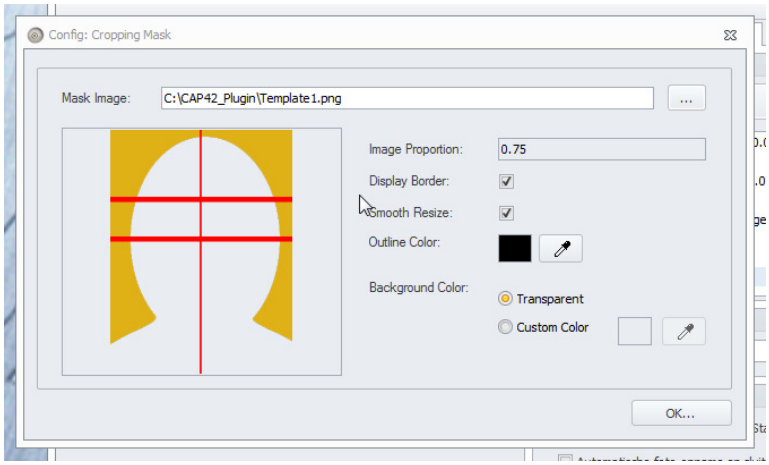
Note:

- This plugin can be used by all IntelliCAP Application Device Plugins!
- If you are in need of a customized plugin, do not hesitate to contact your reseller!
- This plugin is not free of charge! In case your license does not support this plugin, a watermark will be added to the result image!

14.1 Overview

14.1.1 Cropping Mask (2.0.0.0)

This plugin helps the user to select a mask from the captured image and save the cropped mask to disc. First the user is required to select an image as a mask. Then when an image is captured and is being saved, the selected image mask is put on top of the captured image. The user uses this mask to select the portion of the image to be cropped. On saving the image only the portion behind the mask will be saved, hence the selected image behind the mask will be cropped and saved.

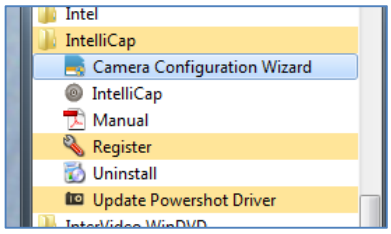


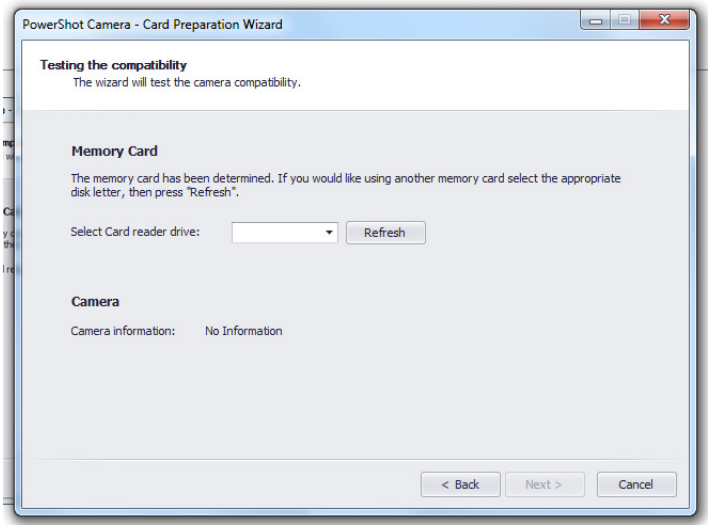
15.0 APPENDIX D: PowerShot – Supported models

15.1 Method 1 - By the captured image.

The camera firmware version can be determined by the EXIF tag data in the captured JPG file.

Use our Card Preparation Utility to analyze the captured JPG file yourself. The Card Preparation Utility is automatically installed during the installation of intelliCAP.




PowerShot Camera - Card Preparation Wizard
Testing the compatibility
The wizard will test the camera compatibility.
Memory Card
The memory card has been determined. If you would like using another memory card select the appropriate disk letter, then press "Refresh".
Select Card reader drive:
Refresh
Camera
Camera information:
No Information
< Back
Next >
Cancel

Insert SD memory card with the captured JPG file into the card reader. Run Card Preparation Utility and follow all wizard instructions you will get. The utility will determine the camera firmware version and inform you if your camera is compatible with inPhoto ID PS / inPhoto Capture PS or not (see Figure 1).

15.2 Method 2 - By the camera serial number

Use this method if you are not able to preliminary capture the image with the camera.

In such a case you can use the camera serial number printed on the camera and on the camera box. This method does not provide 100% accuracy in definition of the camera firmware version but still have a very high probability.

In order to define if Canon Powershot camera firmware is compatible with the PowerShot plugin of the intelliCAP application you can use the camera serial number printed on the camera box.

For the cameras manufactured before 2010 the serial number consists of 10 digits:
1 2 3 4 5 6 7 8 9 0
A A B C D E E E E E

For cameras manufactured after 2010 the serial number consists of 12 digits:
1 2 3 4 5 6 7 8 9 0 1 2

A A B C C D E E E E E E

The camera serial number is printed on the special sticker on the camera bottom:

It is also printed on the camera box, on the sticker with the bar code, below the bard code:

How to read the serial number		
	Description	**Format**
AA	Supposedly, manufacturer ID	From от 01 to 09
B	Region code	2 – USA, 3 – Russia and so on
CC	Supposedly, lot number	Equal to 01, 02, 03, 05, 06, 09, or 26
D	Firmware versin	Equal to 0, 1, 2, sometimes 3. For G and S cameras may be higher.
EEEEEE	Camera number for the certain firmware version	Starts from 000001 for each firmware version

Following Canon Powershot camera firmware versions are compatible with the PowerShot Device Plugin of intelliCAP;

Canon PowerShot A480

Firmware version: xxxx2xxxxx

Camera number: starting from xxxxx05000

Canon PowerShot SX200IS

Firmware version: xxxx0xxxxx

Camera number: starting from xxxxx04000

Canon PowerShot SX210IS

Firmware version: xxxxx0xxxxxx

Camera number: starting from xxxxxx020000

Canon PowerShot A495

Firmware version: xxxxx2xxxxxx

Camera number: starting from xxxxxx005000

Firmware version: xxxxx0xxxxxx, xxxxx1xxxxxx – not compatible and NOT UPGRADABLE

Canon PowerShot SX130IS

Firmware version: xxxxx2xxxxxx, xxxxx3xxxxxx, xxxxx4xxxxxx

Camera number: starting from xxxxxx002000

Firmware version: xxxxx0xxxxxx, xxxxx1xxxxxx – not compatible but UPGRADABLE
The upgrade link is http://web.canon.jp/imaging/dcp/firm-e/pssx130is/index.html

Canon PowerShot A800

Firmware version: xxxxx0xxxxxx, xxxxx1xxxxxx

Camera number: starting from xxxxxx006500

Canon PowerShot A2200

Firmware version: xxxxx3xxxxxx

Camera number: starting from xxxxxx002700

Canon PowerShot SX150 IS

Firmware version: xxxxx0xxxxxx

Camera number: starting from xxxxxx000300

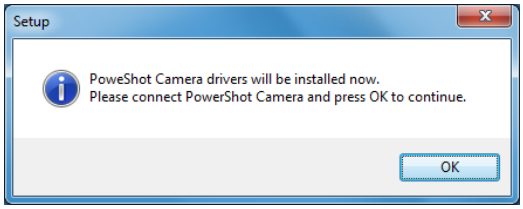
16.0 APPENDIX E: PowerShot – Additional Installation steps for Canon PowerShot A480 / A495 / SX200 and SX210

Additional Installation steps if PowerShot Plugin is detected / embedded to the installer AND you would like to use one of the following PowerShot Devices;

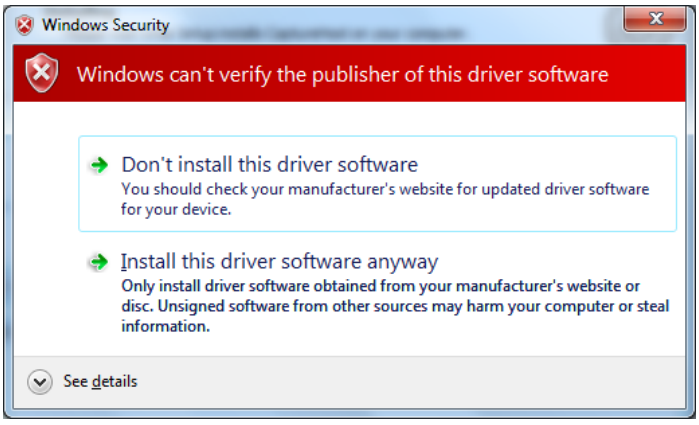
- Canon PowerShot A480,
- Canon PowerShot A495,
- Canon PowerShot SX200 IS,
- Canon PowerShot SX210 IS

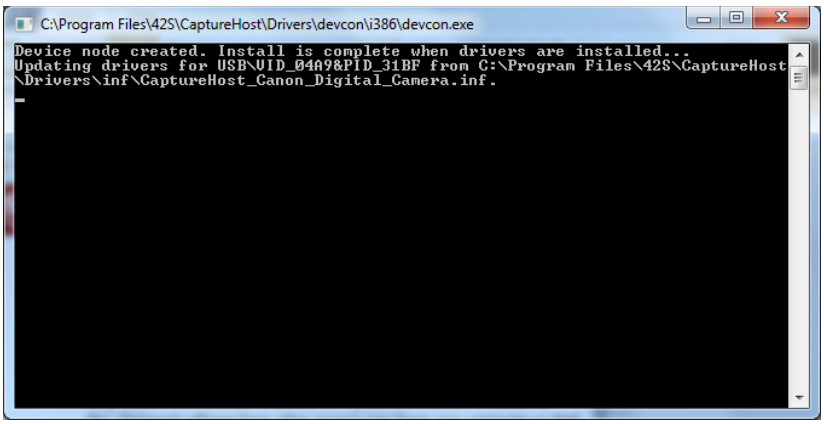
1. If you are using one of above listed Canon PowerShot Camera, additional driver has to be installed. For more recent PowerShot models, there is NO need to install this additional driver and installation task could be skipped!

2. Connect camera to your machine and click <OK> to continue. It's mandatory that you complete the installation process properly to make sure that the software will work outstanding!

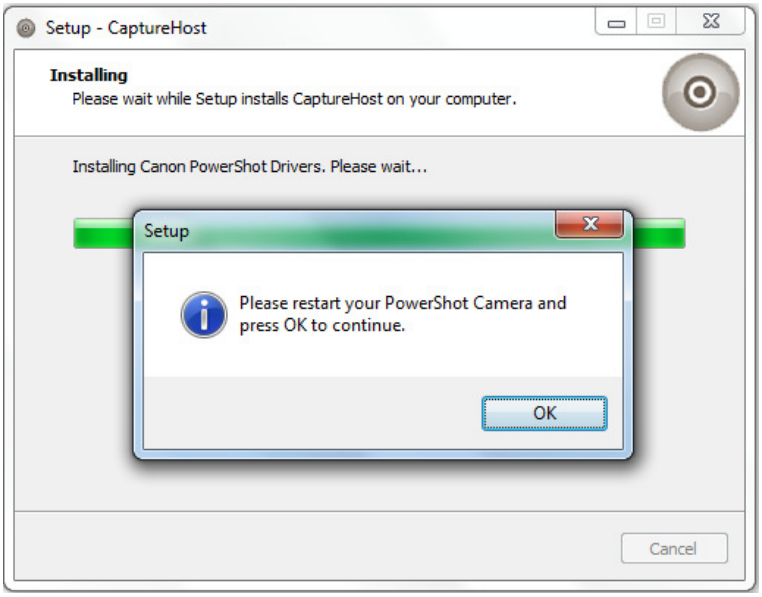


3. The Canon PowerShot Drivers will be installed one by one.


Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details


C:\Program Files\42S\CaptureHost\Drivers\devcon\i386\devcon.exe
Device node created. Install is complete when drivers are installed...
Updating drivers for USB\VID_04A9&PID_31BF from C:\Program Files\42S\CaptureHost\Drivers\inf\CaptureHost_Canon_Digital_Camera.inf.

4. The Canon PowerShot Drivers are installed and if you have a Canon PowerShot Camera connected to your machine, please switch the PowerShot Camera off and on, to configure it and click <OK> to continue.


Setup - CaptureHost
Installing
Please wait while Setup installs CaptureHost on your computer.
Installing Canon PowerShot Drivers. Please wait...
Setup
Please restart your PowerShot Camera and press OK to continue.
OK
Cancel